

S
330.9786651
M16m

**MIDDLE YELLOWSTONE
AREAWIDE PLANNING
ORGANIZATION**

STATE DOCUMENTS COLLECTION

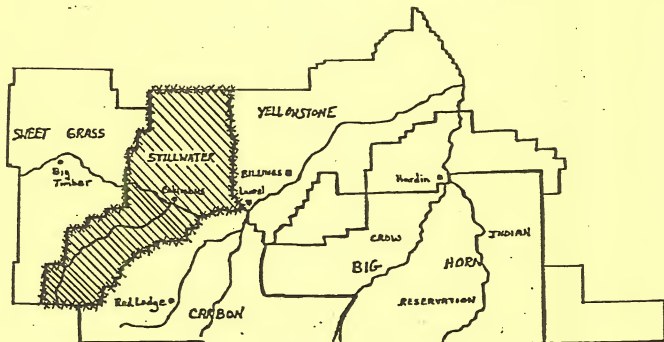
AND

OCT 15 1979

MONTANA STATE LIBRARY
930 E Lyndale Ave.
Helena, Montana 59601

STILLWATER COUNTY

PLEASE RETURN



Montana State Library



3 0864 1006 3539 3

TABLE OF CONTENTS

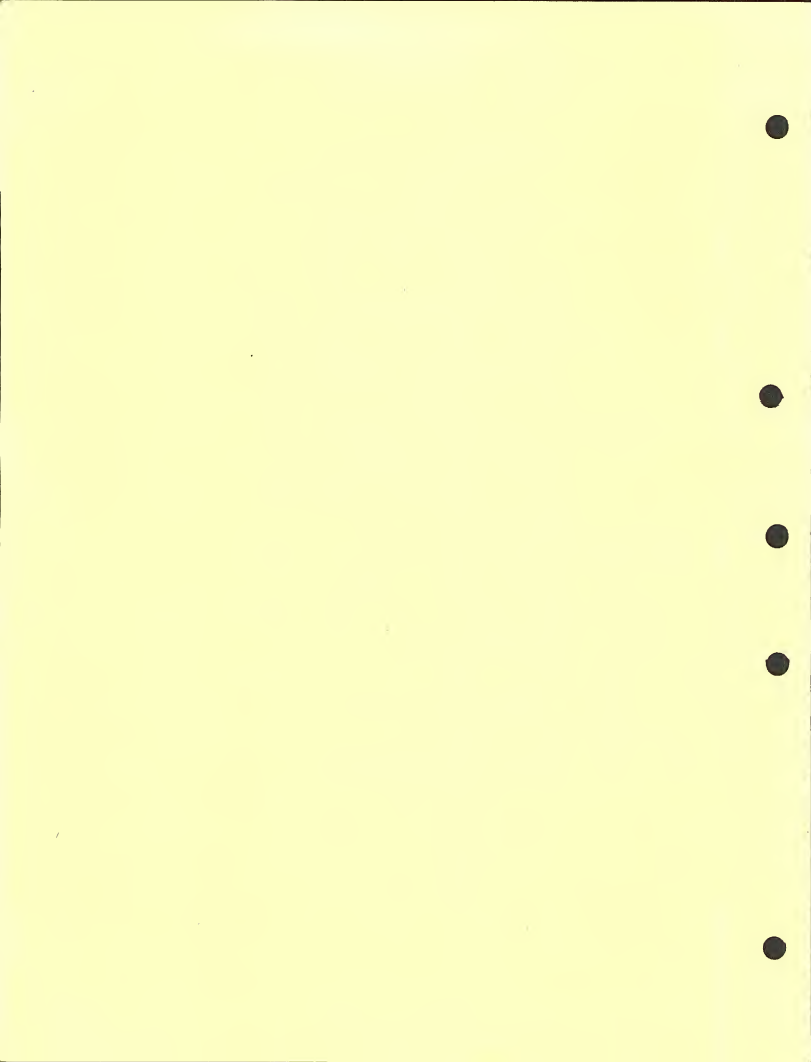
MYAPO BOARD OF DIRECTORS.....	i
MYAPO TECHNICAL COMMITTEE.....	ii
MYAPO STAFF.....	iii
WHY MYAPO?.....	iv
PRIORITIES BY COUNTY AND AREA.....	x
PRELIMINARY FACILITY PLANS.....	xi
STILLWATER NEWS.....	xviii
I. HISTORICAL OVERVIEW.....	1
A. Population.....	2
B. Employment.....	2
II. THE BASIC INDUSTRIES OF THE MYAPO REGION.....	7
A. Agriculture.....	7
B. Mining.....	9
C. Recreation-Tourism.....	11
III. THREE ALTERNATIVE FUTURES FOR THE MYAPO REGION.....	13
A. Stillwater County Projections.....	14
1. Community Population Projections.....	18

LIST OF FIGURES AND TABLES

FIGURE 1	Fishtail, Montana "208" Facilities Plan Planning Area.....	xii
FIGURE 2	Reed Point, Montana "208" Facilities Plan Planning Area.....	xiii
FIGURE 3	Land Use Program.....	xiv
I-1	Population of the MYAPO Region and Each County 1960, 1970, and 1975.....	3
I-2	Racial Composition of MYAPO Region Population 1960 and 1970.....	4
I-3	Sex Distribution By County and Regional Total 1960 and 1970.....	5
I-4	Labor Force, Employment, and Unemployment Rate of the MYAPO Region, Montana, and the United States 1960 and 1970.....	6
II-1	Agricultural Employment 1973.....	7
II-2	Agricultural Employment 1960 and 1970.....	8
II-3	Recreation and Tourism Employment MYAPO Region 1973.....	11
III-1	Population Projections for Stillwater County.....	15
III-2	Stillwater County Population Projections.....	16
III-3	Employment Projections for Stillwater County.....	17
III-4	Personal Income Projections for Stillwater County.....	17
III-5	Community Populations, 1970 and 1975, MYAPO Region.....	19
III-6	Community Population Projections Stillwater County.....	20

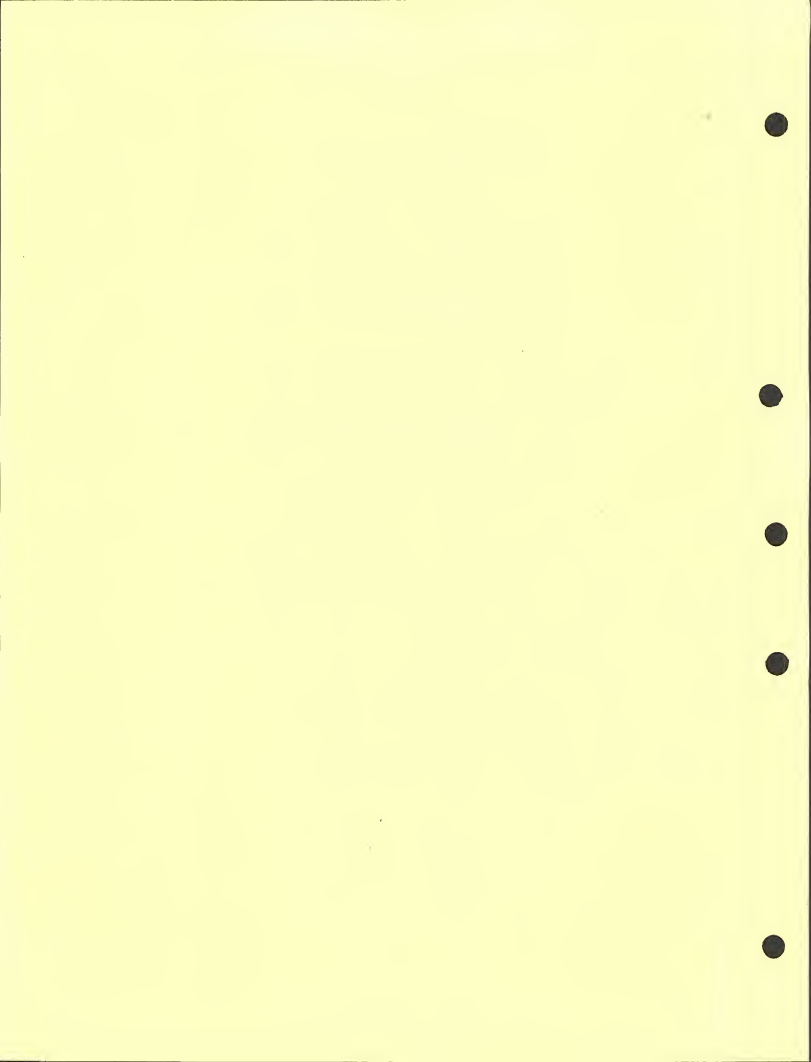
MYAPO Board of Directors

<u>Member</u>	<u>Represents</u>
JOHN BESEL, Co. Commissioner Big Horn County Courthouse Hardin, MT	Big Horn County
BJARNE BJORN DAL, Co. Commissioner Sweet Grass County Big Timber, MT	Sweet Grass County
ELIZABETH BRENNAN, Councilwoman 1st Ward, City of Hardin Hardin, MT	City of Hardin
McLEAN CLARK, <u>Secretary/Treasurer</u> Mayor of Big Timber Big Timber, MT	City of Big Timber
FRANK COLE, <u>President</u> Carbon County Commissioner Red Lodge, MT	Carbon County
RODNEY FINK, <u>Vice-President</u> Sanitarian - Stillwater and Carbon Counties Columbus, MT	Stillwater County
JACK GRIBBLE, Director Carbon Co. Planning Office Red Lodge, MT	Carbon County
MURR ISAACS, Engineering Tech. Engineering Department Laurel, MT	City of Laurel
JIM KRAFT, Director Civil Defense, City Hall Billings, MT	Yellowstone County
DANIEL C. OLD ELK, SR., Project Officer Crow Tribal Water Resources Commission Crow Agency, MT	Crow Reservation Big Horn County
ED STOW, Chief of Environmental Sciences City/County Health Department Billings, MT	City of Billings
JIM WEISGERBER Bridger, MT	Carbon County



MYAPO Technical Committee

	<u>County Represented</u>
CLINT BISHOP, Regional Fishery Mgr. Montana Fish and Game Dept. Billings, MT	Yellowstone County
JERRY D. DYKSTRA Roberts, MT	Carbon County
RODNEY FINK, Sanitarian Carbon-Stillwater Counties Columbus, MT	Stillwater County
GEORGE FREEMAN , <u>Vice-Chairman</u> Director City-County Planning Board Billings, MT	Yellowstone County
RICK GOLD, Regional Hydrologist Bureau of Reclamation Billings, MT	Yellowstone County
JACK L. GRIBBLE, Director Carbon County Planning Office Red Lodge, MT	Carbon County
ALF HULTENG Water Quality Bureau Billings, MT	Yellowstone County
ELLEN KAYE, Consultant Northern Plains Resource Council Billings, MT	Stillwater/Yellowstone Counties
TOM KELLY, Planner Stillwater County Courthouse Columbus, MT	Stillwater County
ROY LEMBKE, Range Conservationist Bureau Land Management Billings, MT	Yellowstone County
TOM LIPPERT, Sanitarian Hardin, MT	Big Horn County
ROBERT H. MADSEN, Study Manager Yellowstone Level "B" Missouri River Basin Commission Billings, MT	Yellowstone County



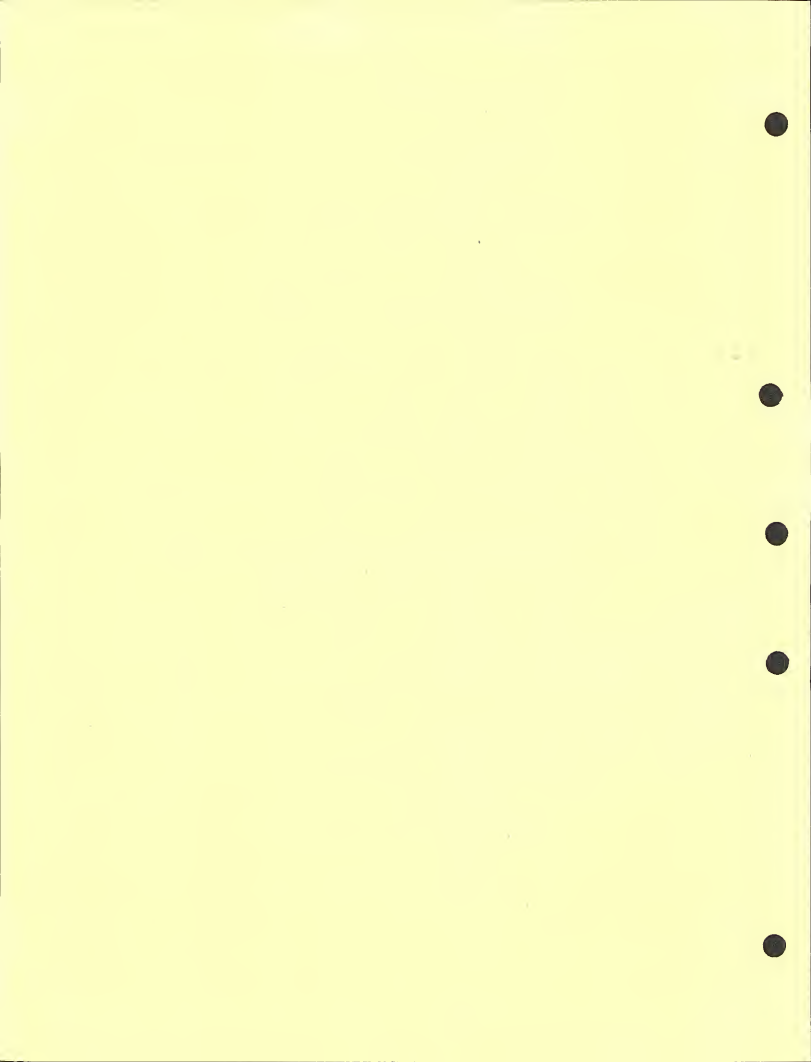
MYAPO Technical Committee (Cont)

	<u>County Represented</u>
ROBERT W. MILLER, Ass't. Forest Supervisor Custer National Forest Billings, MT	Yellowstone County
RUSTY ROKITA, Field Assistant Mont. Dept. of Community Affairs Billings, MT	Yellowstone County
MIKE SIERZ, Director Sweet Grass County Planning Big Timber, MT	Sweet Grass County
STEPHEN R. SMITH, District Conservationist Soil Conservation Service Columbus, MT	Stillwater County
TOM SMITH, Environmentalist Montana Power Company Butte, MT	All Counties
GERALD F. WEBER, County Extension Agent Carbon Co. Extension Service Joliet, MT	Carbon County
JAMES YEDLICKA, <u>Chairman</u> Supervisor Soil Conservation District Fromberg, MT	Carbon County

MYAPO Staff

ALLEN E. BOND, Project Director
PHYLLIS A. COOMBER, Secretary
BARBARA B. PAYNE, Public Relations
ROY A. WELLS, Water Quality Specialist

Office address: 3300 2nd Avenue North, Suites 2 & 6
Billings, MT 59101



WHY MYAPO?

1. *What does MYAPO stand for?*

It stands for the Middle Yellowstone Areawide Planning Organization.

2. *What does Section 208 mean?*

This is the section of Public Law 92-500, or the National Water Pollution Control Act, Amendments of 1972 (NWPCA-A 1972) that authorizes the Environmental Protection Agency (EPA) to conduct and fund this program.

3. *What is MYAPO doing?*

It is developing an areawide water pollution control plan. EPA states it a little differently, i.e. "An Areawide Waste Treatment Plan".

4. *What does "areawide" mean?*

It means that the planning area encompasses more than one county. We are planning for five (5) counties: Big Horn, Carbon, Stillwater, Sweet Grass, and Yellowstone; and the Crow Indian Reservation.

5. *Who determined which counties should constitute the planning area?*

The Governor of Montana designated the boundaries of the planning area -- sometimes these coincide with economic districts, drainages, or however the Governor decides.

6. *Are there any other designated APOs in Montana?*

Yes, three others: the Yellowstone-Tongue with six (6) counties and the Northern Cheyenne Indian Reservation, the Blue Ribbons of the Big Sky County with Gallatin and Madison Counties, and the Flathead Drainage with Flathead and Lake Counties.

7. *Will this plan go the route of many other plans, that is to the shelf where it will collect dust?*

EPA stresses that this plan is to be implemented; therefore, it must be economically, environmentally, socially, and institutionally sound.

8. *How much is this program costing the taxpayers?*

The total grant is for \$735,000.00. \$200,000.00 is to be used for the Crow Tribe subagreement. There is no cost sharing. This is a 100% grant by EPA.

9. *Why should Montanans be concerned about water pollution since most of our streams have high quality water?*

Public Law 92-500 charges EPA to establish water pollution control throughout all of the States. The planning is to cover a twenty (20) year period. Many developments may occur during this time which may change the quality of our waters. For example, in our APO area, hard rock mining may become a reality in the Stillwater Complex. Certainly extensive coal mining will be initiated within the next 20 years in Big Horn County and possibly in Carbon and Yellowstone Counties.

10. *What are the goals of Public Law 92-500?*

The primary aim of the Act is to "restore and maintain the chemical and biological integrity of the Nation's waters". By 1983, wherever possible, water quality is to be suitable for recreational contact and for protection and propagation of fish and wildlife. A further national goal is to eliminate the discharge of pollutants totally by 1985. (This is not a legal binding requirement, however.)

11. *How does the EPA expect to achieve these goals?*

- a. EPA has developed an expanded system of federal grants to plan (Facility Planning) and construct (Title II - Grants for Construction of Treatment Works) publically owned waste treatment plants.
- b. A permit program (the National Pollution Discharge Elimination System - NPDES permits) has been established and geared to restricting pollutant discharges from point sources (discernible, confined and discrete conveyances, including ditches).

- c. Nonpoint sources pollution control is to be achieved by the 208 Program outputs.

12. *How is MYAPO organized?*

It is a local, five (5) county (and the Crow Tribe) organization. The Board of Directors consists of thirteen (13) members who are representatives of the five (5) county commissions, the Crow Indian Reservation, and the cities or towns of Big Timber, Billings, Bridger, Fromberg, Hardin, Laurel, and Red Lodge. A Technical Committee of approximately twenty (20) members has been formed from all levels of government within the five county area. This group consists of planners, sanitarians, engineers, environmentalists, agriculturalists, and one industrialist. The President of the Board is Frank Cole, Jr., County Commissioner of Carbon County; the Vice-President is Rodney Fink, Sanitarian of Stillwater County; and the Secretary/Treasurer is McLean (Mac) Clark, Mayor of Big Timber. An Executive Committee functions occasionally and consists of the President, Vice-President, Secretary/Treasurer, and two (2) members at large from the Board. The staff consists of a project director, a planner, a public relations person, and a secretary. A water quality specialist from the Water Quality Bureau is assigned to the project.

13. *How is MYAPO's Program structured?*

Our program is divided into a set of general tasks which are: Administration; Water Quality; Agricultural Nonpoint Source Assessment; Mining, Silviculture, and Construction Nonpoint Source Assessment; Air Quality, Residual Wastes and Land Disposal Evaluation; Facility Planning; Land Use Planning (including Demographic and Economic Projections); Management (including Legal Management); Crow Tribe Administration; and Crow Tribe Subagreement.

14. *Is there planning in the nondesignated areas?*

Yes, this is performed by the Water Quality Bureau of the State Department of Health and Environmental Sciences.

15. *Since the State Water Quality Bureau has control of municipal and industrial waste discharges through the NPDES permit program, what is the thrust of the 208 Program?*

The thrust of our program is in nonpoint source pollution control management. That pollution which enters the natural waters without passing through discreet conveyances, pipes, ditches, drains, etc. is considered nonpoint in origin and is related to activities in agriculture, mining, silviculture, construction, and urban runoff. All contribute various forms of pollution; most of these may be controlled in varying degrees by applying good management practices. Therefore, a set of goals of the program is to develop Best Management Practices for each nonpoint source of pollution. Another set of goals is to develop plans for implementation.

16. *Since EPA provides the funds, does EPA establish or dictate policy?*

There is close coordination between MYAPO, EPA, and the State Water Quality Bureau. Direction is given and expertise is offered, but EPA's control is limited by the conditions of the grant agreement. However, EPA does control the funds, and this is persuasive.

17. *What is the thrust in your water quality program?*

The goals of this program are to identify water quality problems, present and potential [over a twenty (20) year period], and to develop programs and solutions. The consultant is the firm of Hurlbut, Kersich, and McCullough, and the amount of the contract is \$53,970.00. The study has been divided into three (3) general categories: surface water quality, subsurface water quality, and development-urban runoff.

18. *How are the problems identified and processed?*

The problems have been obtained from the Technical Committee and from the public as a result of public participation meetings in each county. The consultant has also developed problems from the literature review and personal information. A method has been developed for the examination of problems, i.e., The Problem and Solution Documentation Procedure. A simplified version of the program flow is: identify candidate problems, determine specific problems, finalize problems and assign final priority, develop candidate solutions, determine specific solutions, and select recommended solutions.

19. *What is residual waste?*

It is solid, liquid, or sludge substances from man's activities. Our Residual Wastes Program has not been initiated, but contract negotiations have started.

20. *Will your agricultural nonpoint source program place additional burdens upon the farmers and ranchers to control pollution?*

It could be burdensome for the control of some forms of pollution; that remains to be seen. However, the thrust of the program will be to identify agricultural practices that are contributing pollution (sediment, generally speaking), to establish treatment procedures by applying Soil Conservation Service (SCS) Handbook methods, and to recommend to the United States Department of Agriculture (USDA) that these water quality conservation practices be funded realistically through the Agricultural Stabilization and Conservation Service (ASCS) on a cost share basis.

21. *Do you expect to achieve control without becoming involved with permits and enforcement?*

That is a good question. Some of our problem streams may have substantial sediment generated as a result of poor range management practices; some irrigation return flows may return sediment, but frequently this load is less than the load that is originally picked up in the ditch; waste spilling may or may not be a problem; poor irrigation practices may accelerate channel erosion; there are other sediment producing agricultural practices. However, in our MYAPO district there is also much natural erosion of stream banks due to the erosive nature of the soils; contribution from agriculture is probably not as great as it is frequently made out to be. An incentive approach has merit, and with reasonable cooperation from the farmers and ranchers significant reduction in sediment from poor agricultural practices will be achieved.

22. *Do you expect to use an incentive program to control NPS pollution in mining, silviculture, and construction?*

No. It is possible that laws on the books cover these situations. This is being determined by our legal consultant who may determine that a comprehensive erosion

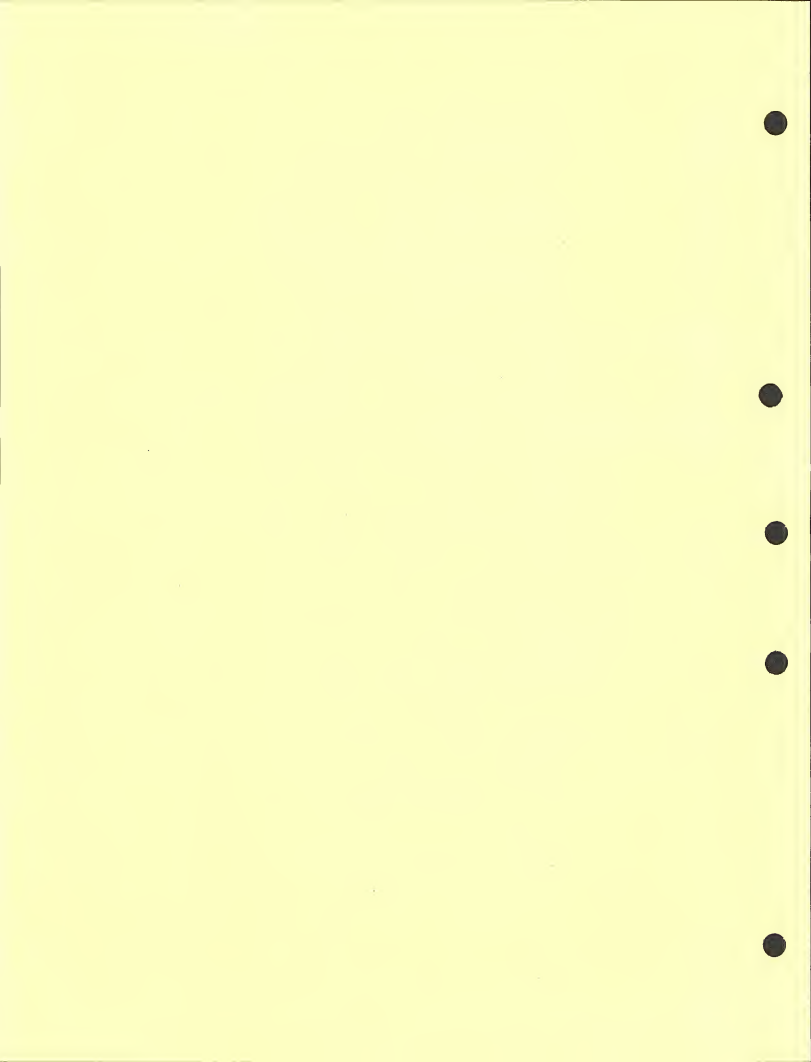
and sediment control law is needed. It probably would require that plans for sediment control measures on small operations be submitted to some agency, and that those planning extensive projects obtain permits which would hold the permittee to complete performance of the submitted plan.

23. *How are you going to implement the plan?*

This question cannot be answered at this time. All point source aspects of the plan will probably be implemented by the State Water Quality Bureau. As was previously mentioned, there may be adequate laws on the books to achieve NPS pollution control. New erosion and sediment control legislation may have to be drafted. The Conservation Districts may perform various functions in implementation. It may be feasible to establish an areawide planning and implementation office. These alternatives and others will be examined, and the best approach will be promoted. The public will have an opportunity to participate in the planning process.

Priorities by County and Area

	Big Horn	Carbon	Stillwater	Sweet Grass	Yellowstone	Area
1. Facility Planning	(H)	(H)	(H)	(H)	(H)	(H)
2. Mining	(H)	M	(H)	(H)	L	(H)
3. Recreation-Subdivision	L	(H)	(H)	M	(H)	(H)
4. Groundwater	(H)	L	(H)	L	(H)	M
5. Agricultural Source	M	(H)	L	L	M	M
6. Construction	M	L	(H)	(H)	M	M
7. Residual Wastes	M	M	L	M	L	M
x 8. Salt Water (Saline Seeps)	L	L	(H)	L	M	M
9. Silvicultural	L	M	L	M	L	M
10. Urban Stormwater	L	L	L	L	M	L
11. Industrial	L	L	L	L	L	L
12. Hydrographic	L	L	L	L	L	L



Preliminary Facility Plans

BIG HORN COUNTY

City

Consultant

Lodge Grass

Mueller Engineering, Inc.
of Billings
Robert Sanderson

CARBON COUNTY

City

Consultant

Bearcreek
(under consideration)

Hurlbut, Kersich, & McCullough
of Billings
David McCullough

Fromberg

Morrison-Maierle, Inc.
of Billings
Larry Larsen

STILLWATER COUNTY

City

Consultant

Fishtail

Mueller Engineering, Inc.
of Billings
Robert Sanderson

Reed Point

Morrison-Maierle, Inc.
of Billings
Larry Larsen

SWEET GRASS COUNTY

City

Consultant

Big Timber

Wenzel and Company
of Great Falls
Jim Heberly

YELLOWSTONE COUNTY

City

Consultant

Billings Heights-
Lockwood

Christian, Spring, Sielbach &
Associates of Billings
Gerald Gaston

Huntley

Morrison-Maierle, Inc.
of Billings
Larry Larsen

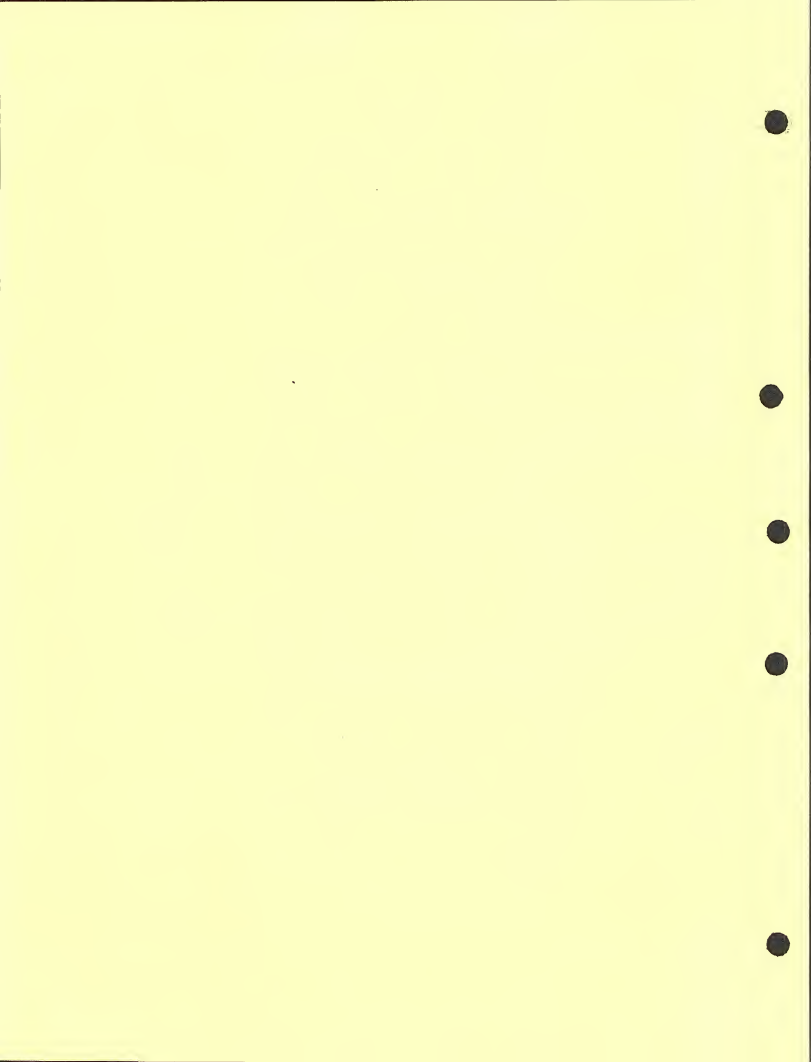


FIGURE 1



MAP No. 1
FISHTAIL, MONTANA
"208" FACILITIES PLAN
PLANNING AREA

SCALE: 1"=2000' W.Q. 76-32 3/25/76

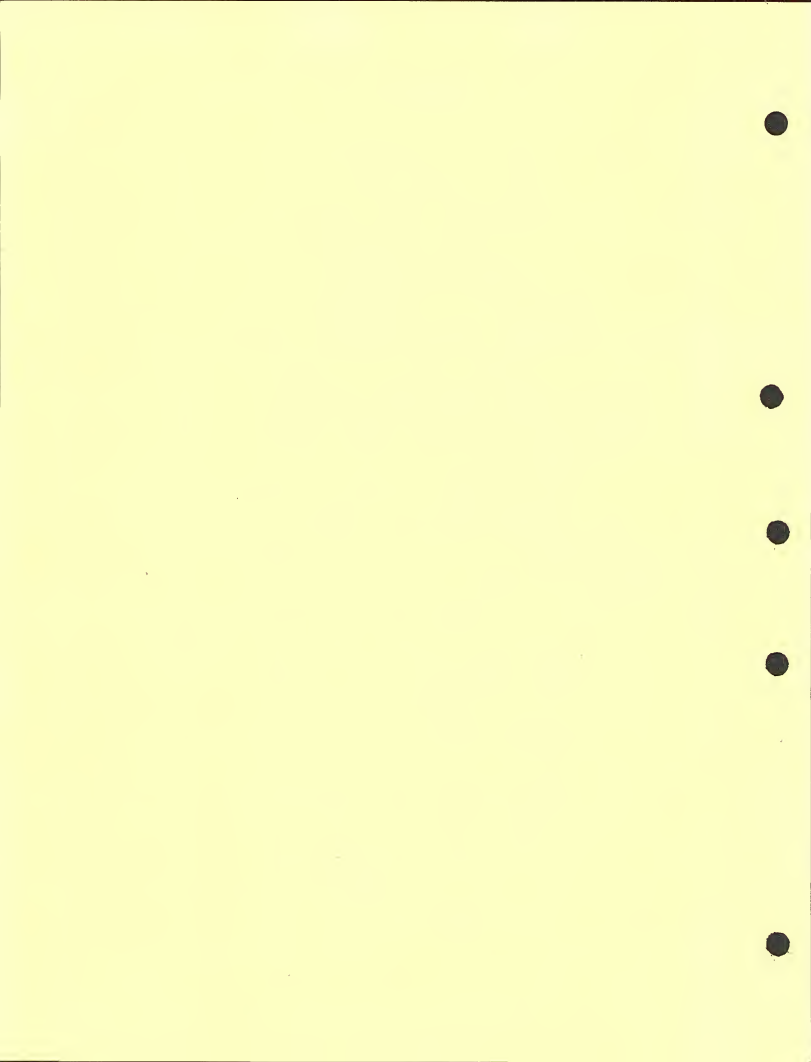
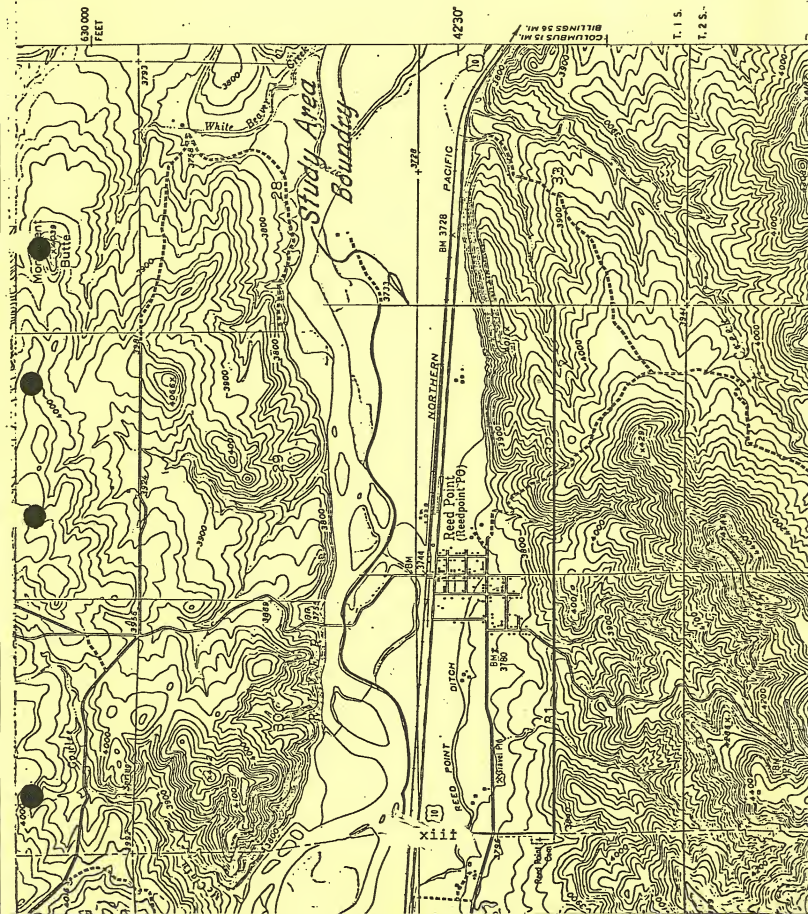
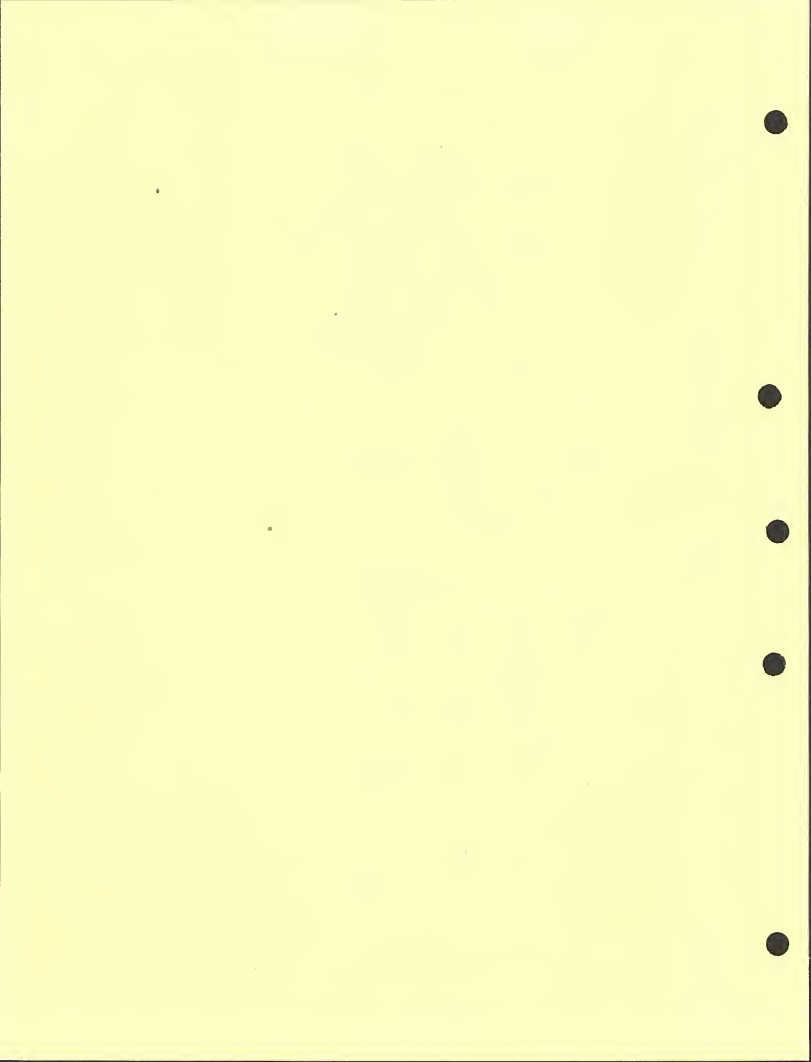


FIGURE 2

REEDPOINT

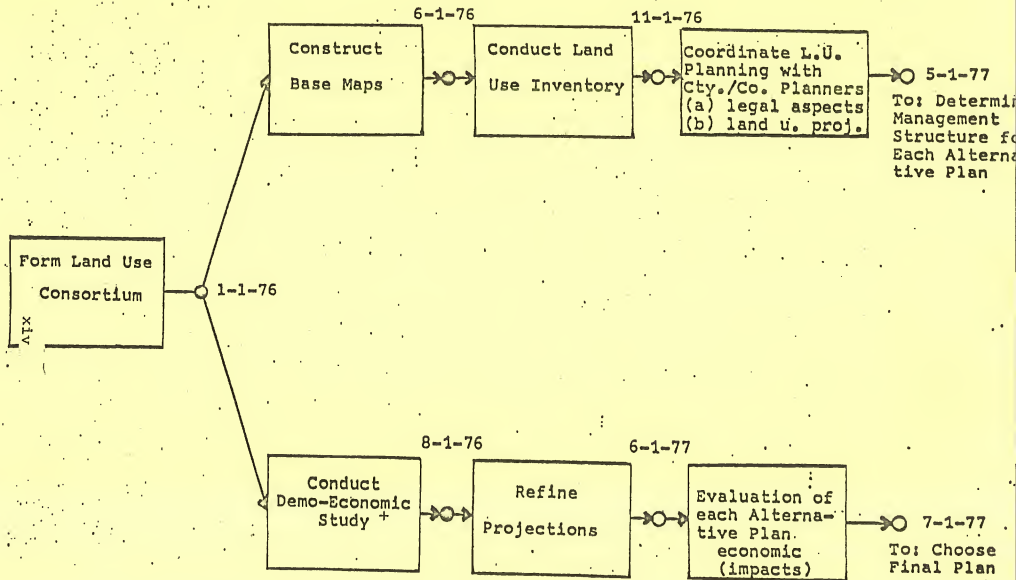
REEDPOINT





LAND USE PROGRAM *

Figure 3



* Revised: Does not correspond with overall 208 flow diagram.

+ Demo-Economic Program included in Land Use Program for organizational purposes.

Land Use Classification System

1. Urban, Scattered, and Built Up

- 1.1 residential/commercial
 - 1-a high density (1 or more D.U./acre)
 - 1-b low density (.05 to .9 D.U./acre)
- 1.2 rural areas
- 1.3 industrial
- 1.4 water, sewage, and solid waste facilities
- 1.5 second home subdivisions (unplatted)
- 1.6 platted subdivisions

2. Recreation Areas

- 2.1 national wildlife refuges
- 2.2 campgrounds/reststops/fishing access
- 2.3 wilderness areas (proposed)
- 2.4 blue ribbon fisheries
- 2.5 other fisheries
- 2.6 state parks/state or national recreation areas
- 2.7 ski areas
- 2.8 other

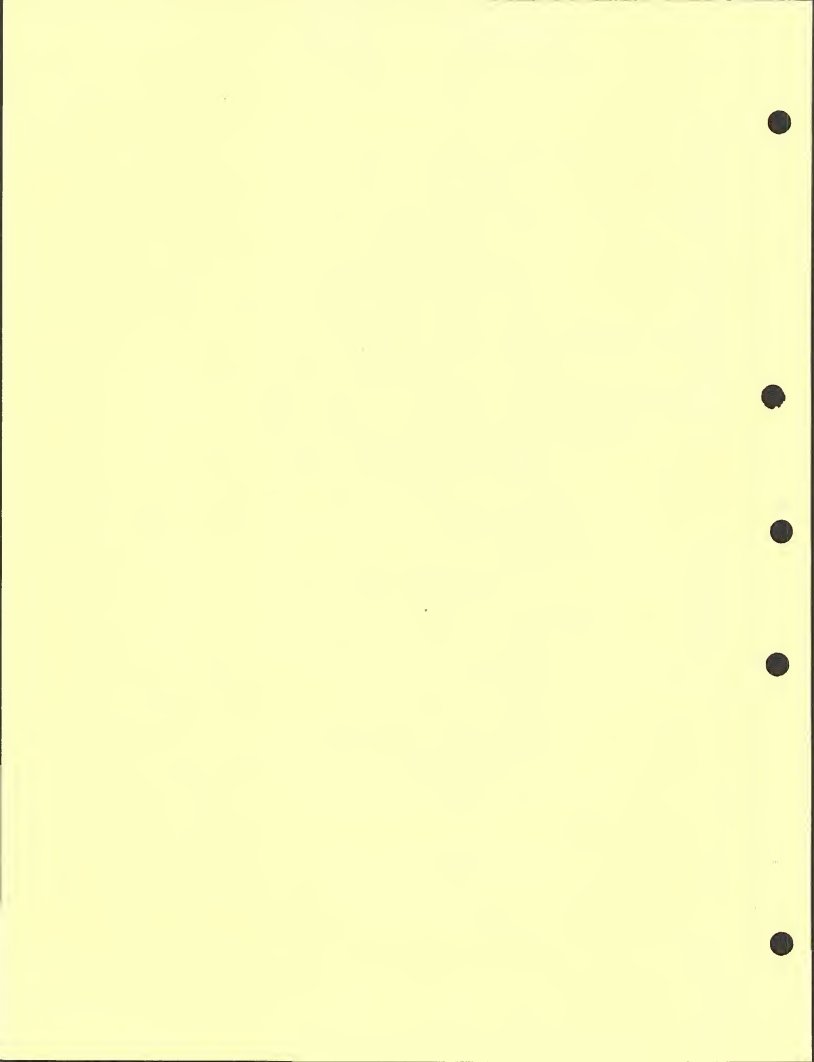
3. Agricultural, Range, Forest, and Problem Lands

- 3.1 urban and scattered built-up
- 3.2 irrigated lands
- 3.3 dry croplands
- 3.4 commercial feedlots
- 3.5 grasslands
- 3.6 coniferous forests
- 3.7 deciduous forests
- 3.8 bad lands (clay hills)
- 3.9 saline seeps
- 3.10 alkali flats
- 3.11 irrigation canals
- 3.12 marsh lands

4. Mineral and Energy Production Areas

- 4.1 coal deposits
- 4.2 deposits of other minerals (e.g., chrome, uranium, copper, etc.)

(continued)



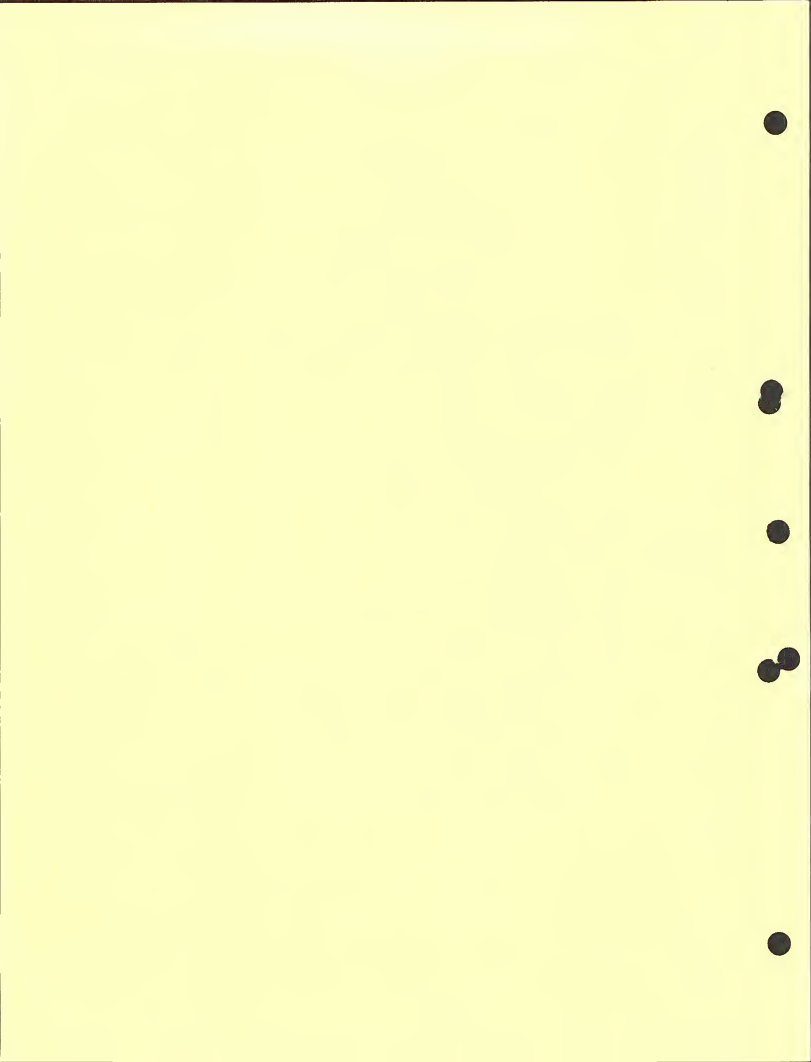
Land Use Classification System

(continued)

- 4.3 areas of open pit extraction
- 4.4 past and present underground mining sites
- 4.5 rock quarries, sand and gravel pits
- 4.6 deposits of sand, gravel, bentonite, limestone, etc.
- 4.7 storage areas and tailings ponds (past and present)
- 4.8 oil and gas fields
- 4.9 potential geothermal areas

Land Suitability System

1. Land Ownership
 - 1.1 state lands
 - 1.2 U.S. Forest Service
 - 1.3 BLM
 - 1.4 private lands
2. Climate (Precipitation)
3. Soil Associations
4. Geological Features and
Groundwater Recharge Areas



NEWS

J-M Discharge Permit Hearing August 24

*Stillwater
7/27/74*

This week the Stillwater Protective Association received notice from the State Department of Health and Environmental Sciences (DHES) regarding the Discharge Permit hearing for the Johns-Manville Corporation. Johns-Manville was fined \$10,000 by the DHES in May for putting industrial wastes into the West Fork of the Stillwater River without a discharge permit. The hearing has been set for Tuesday August 24 at 7:30 p.m. in the Multipurpose Room at Columbus High School. Representatives from the Department of Health's Water Quality Bureau and the Legal Division will be discussing the conditions of the permit. The SPA is currently reviewing the permit and will be providing testimony at the hearing.

Environment or platinum?

By Flynn J. Ell
Of The Gazette Staff

NVE — There are two holes in this story.

One is a proposed 3,000-foot long hole in the Bearrooth mountains being bored by Johns-Manville (JM) Corp. called an adit.

The other hole is between Custer National Forest and the Montana Fish and Game Dept. and is called a communications rap.

Both holes are getting bigger as the JM adit probes in search of mountain pockets of platinum valued at \$200 an ounce and palladium at \$130.

JM has announced platinum - palladium content in 23 sampled locations at .5 ounce per ton, an apparently rich content, which both Fish and Game and Forest Service officials believe will lead to mine development in an area 30 by 5 miles wide called the Stillwater Complex.

Fish and Game Biologist Phil Stewart and Bill Stoneberg charge the Forest Service has been ignoring their advice on what the present JM development is doing to the environment.

Like the 55-head elk herd is dying off ranges Stoneberg has charged them on for the past four years.

roads are taking a pounding from JM traffic to the adit 10 miles above Nye, on Horseman Flat, and near Fickett Pin ranch where rumors are that JM has bought the 1,200-acre spread to put in a mill and settling ponds.

And water from the adit itself is running through a mineralized pile of waste material and polluting the West Fork of the Stillwater. Stewart has been guarding over for four years.

Both Fish and Game biologists claim that to date their expertise on water and plant life in the area has received only token

recognition. They haven't been invited to development meetings and both fear failure by the FS to plan for the development will result in serious destruction of an area noted by many for its "high scenic value."

Roads they say, should have been "levelled up" before heavy equipment began rolling over them. Culberts should have been installed and gravel laid on the roads.

"There have only been small things so far, but the potential is there for a drastic impact," Stoneberg said.

Yes, Woodcock, state Fish and Game director, is worried.

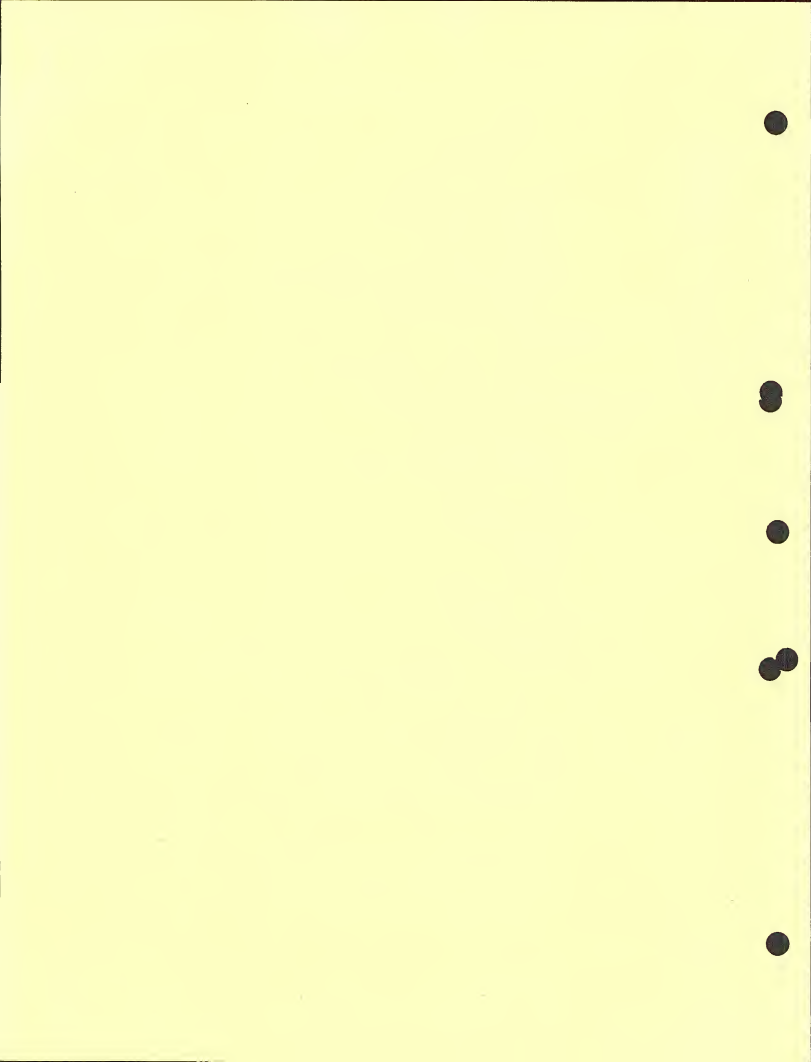
"We would like to suggest that much greater control be placed on the operation than apparently has been," he advised the John Gibson of Billings, FS Conservation in May.

The JM adit, although under attack in U.S. District Court by Friends of the Earth, is a legitimate enterprise sanctioned by 1872 mining laws.

The communications gap is a two-way street, Gibson said in revealing that perhaps neighbor Stoneberg, nor Stewart have made efforts to be included in planning discussions.

There seems to be something terribly wrong, we should be working together," Gibson added.

He attributed the communications gap to "oversight" possibly between FS and Fish and Game supervisors advising the track of Stoneberg in the shuffle. But Gibson insists that FS planning cannot be done before JM produces a development plan for a mining operation which they have not



Now's the Time! Get those Water Use Permit Applications in!

In a recent news release sent to all media with an interest in agriculture, the Montana Department of Natural Resources and Conservation (DNR&C) strongly recommended that anyone planning new water use for next year's irrigation season make application now for the necessary water use permit.

According to the agency, which administers all water rights in the state, the workload is such that anyone waiting until next spring to make application for a permit probably wouldn't get it processed by irrigating time. The Department emphasized that the sooner an application is filed, the better.

The announcement pertained to new uses of water only. That is, established annual amounts under established water rights are not affected.

But any new development (since July 1, 1973), such as a diversion, impoundment or withdrawal, requires a permit first. An Application for Beneficial Water Use Permit must be filed in every case if the water to be used is surface water. In addition, the same application form is used for groundwater, if the anticipated use is at 100 gallons per minute or more.

In groundwater situations where the well or developed spring water will be used in amounts less than 100 gallons per minute, the process is much simpler. The owner simply files a Notice of Completion of Ground-Water Development within 60 days of first using the water, and the permit is granted automatically.

Applications forms are available at the office of any county clerk and recorder, as well as from DNR&C's Water Resources Division. The Division, headquartered in Helena, maintains field offices in Kalispell, Glasgow, and Billings. Application forms, as well as assistance in completing them, can be obtained at any of the Water Division offices.

Division offices can also provide information on forms for a variety of other water rights requirements. For example, prior approval is necessary for any changes in an established water right, such as changes in the water's use, the place and means of diversion, or the place of storage. In addition, although prior approval is not necessary, the Department must be notified of any change of ownership in a water right.

SOLID WASTE

The Board of Directors of the Refuse District has decided to let residents outside the District (Stillwater County) use the solid-waste-disposal facilities. Cost to these residents, will be \$3.00 per month, but will be adjusted for commercial establishments. The rate for residents of Stillwater County is \$2.00 per month. However, to compensate for Stillwater County revenue-sharing funds being spent for the initial cost of equipment, etc., the Board has adjusted the figure for out-of-county residents. Because the revenue-sharing money was strictly for Stillwater County, residents outside the county must compensate accordingly. If you want to use Stillwater County's disposal program, contact Rod Fink, Chairman, Refuse District Board, Columbus (phone 322-5237).

Public Meetings to discuss Land Use Plan for Beartooth Plateau

Billings, MT—Forest Supervisor Dan MacIntyre, of the Custer National Forest, has announced that a series of public meetings will be held during the second week in October to discuss the Land Use Plan and Draft Environmental Statement for the Beartooth Plateau Unit. The purpose of the meetings will be to hear what the public has to say about the proposed management for this unit which lies partly within three National Forests in Montana and Wyoming.

The proposed management is outlined in a Unit Plan and Draft Environmental Statement which was released to the

Council on Environmental Quality, and to the public on July 22, 1976. Additional copies of this document are available at each Forest Supervisor's Office for the Gallatin, Custer, and Shoshone National Forests.

The public meetings will be held at Powell, Wyoming, on October 13; Red Lodge, Montana, on October 14; and Cooke City, Montana, on October 15, 1976. These will not be formal hearings but will be structured so that everyone wishing to be heard will get a chance. In addition, written comments will be accepted until November 15, 1976.

'Battle of the Stillwater' begins

by Bob Ozinga, Bearcreek
(Editor's note: This meeting was covered in last week's paper (Aug. 26). Because of press time, we left early, Bob Ozinga stayed on, here are his observations)

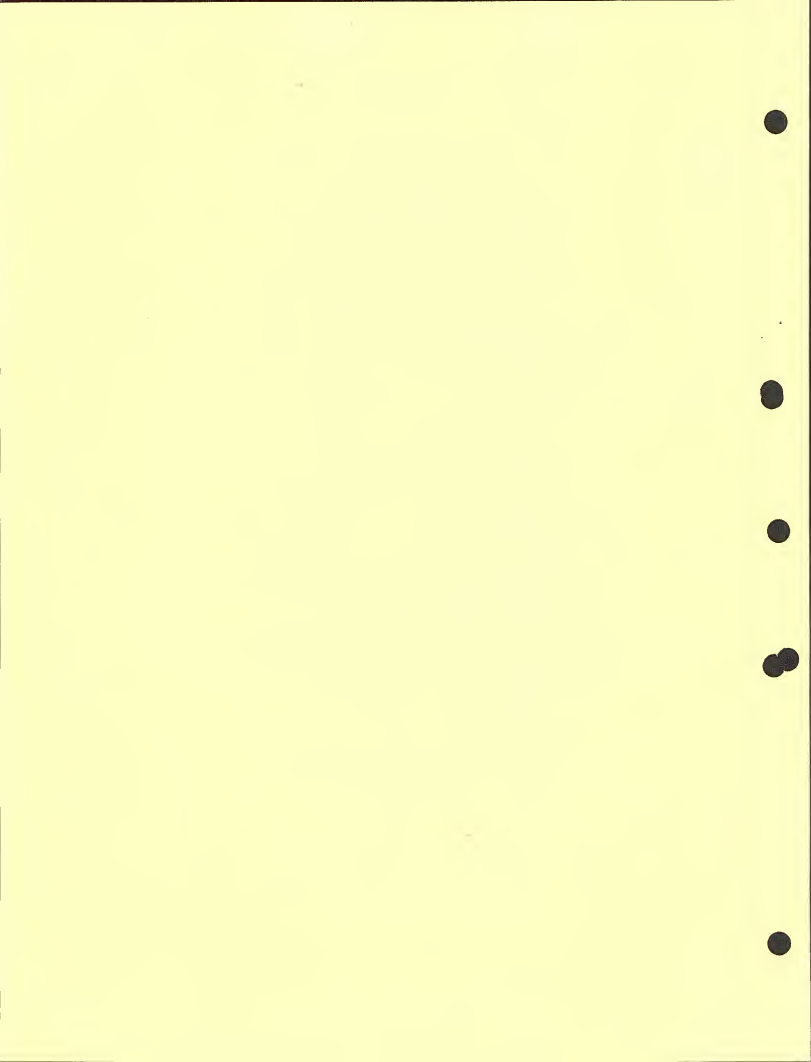
It was a sweltering night on August 24, but over 200 people—most of them area residents—suffered the sauna-like conditions in the Columbus high school multi-purpose room in order to submit testimony and to listen to others comment upon a request by Johns-Manville Corporation to discharge "waste water" into the West Fork of the Stillwater River.

Most people in Carbon County are clearly aware that the race is on for Montana's mineral resources. Corporations large and small are investing large amounts of money and manpower into procuring leases and mineral rights, particularly coal rights, in the eastern part of the state. But Montana's preoccupation with coal development and strip-mining has tended to obscure the hard-rock wealth that might lead to massive industrialization in Stillwater County.

This hard-rock wealth lies in the Gallatin National Forest among the Beartooth Mountains and is popularly called the "Stillwater Complex." Various scientific estimates point out that the Stillwater Complex contains one of the free-world's largest concentrations of platinum and nickel ore, along with undetermined amounts of so-called "trace" metals like gold, copper, silver and chromium.

Corporations that specialize in extracting such minerals have paid an increasing amount of attention to the Stillwater Complex in recent years. In 1975, Johns-Manville applied for and received permission from the

STILLWATER
News
9/23/76



I. HISTORICAL OVERVIEW

STILLWATER COUNTY

The situation in Stillwater County is similar to that in Carbon County. The economic base has traditionally been agriculture, a situation which resulted in declining employment and population during the 1960s as well as low income levels relative to other areas of the state and nation.

The decline in employment of nearly 20 percent between 1960 and 1970 resulted in net out-migration of nearly one-fifth the 1960 population. The total population in 1970 was 16.2 percent lower than the 1960 population. The declining employment and the large dependence on agriculture resulted in a low median family income (only three-fourths of the national median family income) and an increase in the unemployment rate.

The 1970s have seen a reversal of trends. For the first time in many years, the population of the county has increased. The increase in the past five years was nearly as large as the decrease over the preceding decade and occurred in response to increased recreation and tourism within the county. The Bear-tooth Mountains and excellent fishing opportunities represent an economic resource to the county in use since 1970. An increase in population came as a substantial number of workers from Billings and Laurel were attracted to the rural atmosphere and moved to the eastern edge of Stillwater County (Park City postmaster, personal communication, May, 1976). As of January 1, 1976, the situation appears to have become one of increased employment and increased population.

A. POPULATION

There are three characteristics of the population which are important in the identification of regional patterns and which are especially helpful in population projections. These characteristics are discussed below and include: 1) number of inhabitants; 2) racial composition; and 3) sex and age composition. The first of these--number of inhabitants--is discussed with emphasis on two time periods, the 1960s and the first half of the 1970s. The experiences in each of these periods were dissimilar in all five counties. The second characteristic--racial composition--is important in understanding the region's population because of its influence on fertility rates and migration rates. Sex and age composition in the region are presented third. These give additional insight into demographic conditions.

1. Employment

Employment in 1960 and 1970, as reported by the Bureau of the Census, is shown in Table I-4 (comparable data are not available for 1975). Employment increased in the MYAPO region by 7.2 percent during the 1970s. This increase is similar to that of Montana (7.4 percent), but it is less than half of the percentage increase in the United States as a whole (18.4 percent). Employment, then, increased much more slowly in the region than it did elsewhere in the nation. The net out-migration from the region noted above can be seen as a direct result of the region's slow economic growth compared to other areas.

As might be expected, employment changes over the decade of the 1960s were not uniform throughout the region. The three counties which are dependent on agriculture had very different experiences from the region as a whole. Carbon and Stillwater Counties experienced substantial declines in employment over the ten-year period, primarily due to decreased employment in agriculture. The total decrease was 984 persons in both counties, 531 of which had been in agriculture (1960 and 1970 Census of Population, various volumes). The other primarily agricultural county, Sweet Grass, experienced a minor increase in employment of 41 positions, or 3.4 percent over 1960. This increase was minimal and was a result of increased construction in the county.

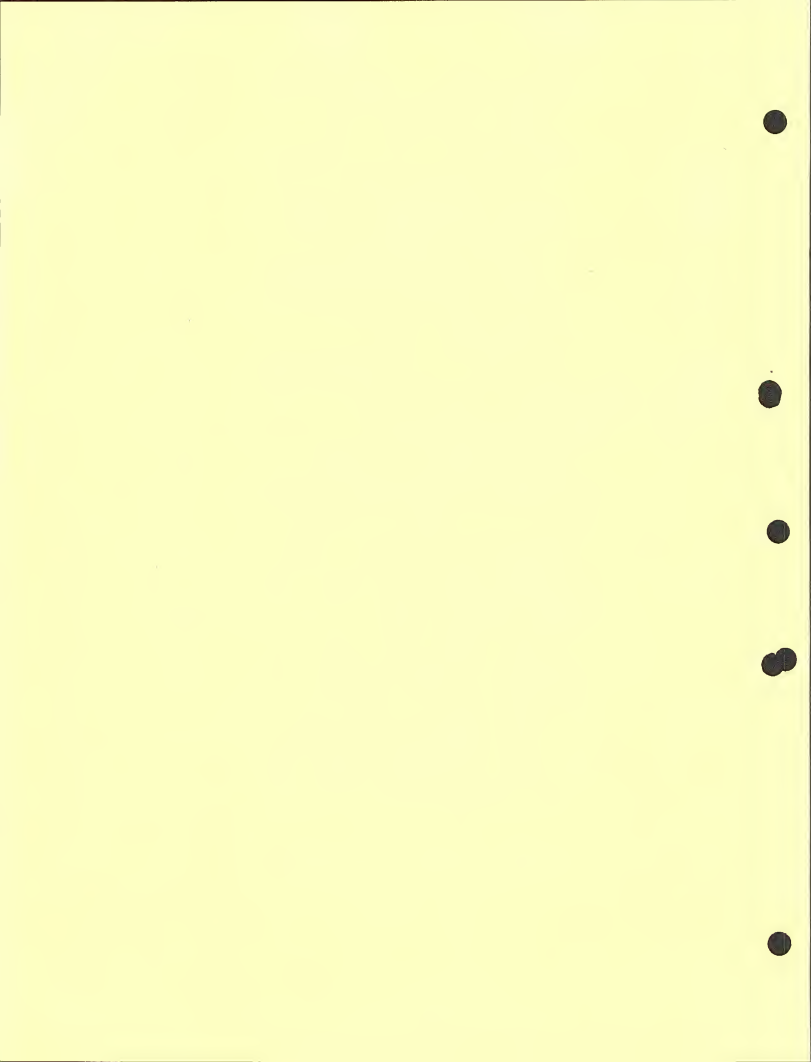


TABLE I-1

POPULATION OF THE MYAPO REGION AND EACH COUNTY,
1960, 1970, AND 1975

County	1960	1970	Percentage Change 1960-1970	1975	Percentage Change 1970-1975	Percentage Change 1960-1975
Big Horn	10,007	10,057	0.5	10,900	8.4	8.9
Carbon	8,317	7,080	-14.9	7,700	8.8	-7.4
Stillwater	5,526	4,632	-16.2	5,300	14.4	-4.1
Sweet Grass	3,290	2,980	-9.4	2,900	-2.7	-11.9
Yellowstone	79,016	87,366	10.6	97,300	11.4	23.1
MYAPO Total	106,156	112,115	5.6	124,100	10.7	16.9
Montana	674,767	694,409	2.9			
U.S.	179,323,175	203,211,926	13.3			

Source: U.S. Bureau of the Census, Census of Population: 1960, Characteristics of the Population: U.S. Summary (Washington, D.C.: U.S. Government Printing Office, 1964).

U.S. Bureau of the Census, Census of Population: 1960, Characteristics of the Population: Montana (Washington, D.C.: U.S. Government Printing Office, 1963).

U.S. Bureau of the Census, Census of Population: 1970, Detailed Characteristics: U.S. Summary (Washington, D.C.: U.S. Government Printing Office, 1973).

U.S. Bureau of the Census, Census of Population: 1970, General Population Characteristics: Montana (Washington, D.C.: U.S. Government Printing Office, 1971).

U.S. Bureau of the Census, "Population Estimates and Projections", Current Population Reports-Series P-26 (Washington, D.C.: U.S. Government Printing Office, 1975).

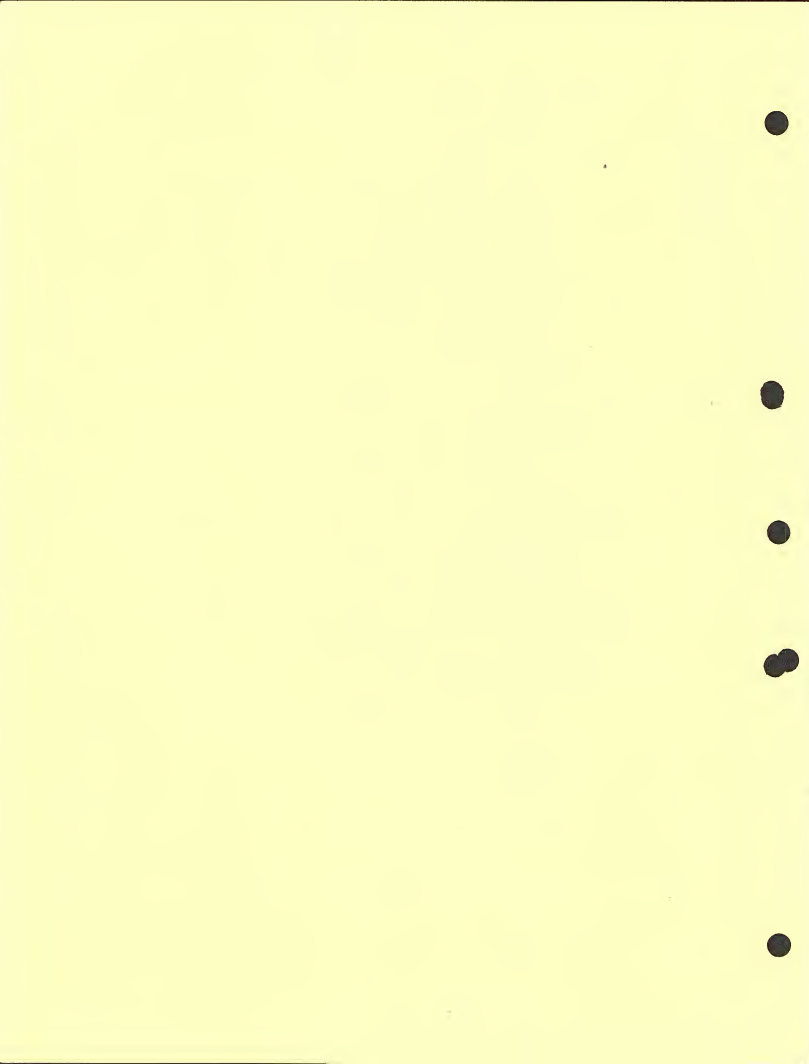


TABLE I-2

RACIAL COMPOSITION OF MYAPO REGION POPULATION
1960 and 1970

County	White		Indian		Other Non-white	
	Number	% of Total	Number	% of Total	Number	% of Total
Big Horn						
1960	6584	65.8	3334	33.3	89	0.9
1970	6018	59.8	3917	39.0	122	1.2
Carbon						
1960	8300	99.8	5	0.1	12	0.1
1970	7022	99.2	29	0.4	29	0.4
Stillwater						
1960	5511	99.7	12	0.2	3	0.1
1970	4595	99.2	23	0.5	14	0.3
Sweet Grass						
1960	3290	100.0	---	---	--	---
1970	2978	100.0	2	---	--	---
Yellowstone						
1960	78227	99.0	410	0.5	379	0.5
1970	85765	98.2	1063	1.2	539	0.6
MYAPO Region Total						
1960	101912	96.0	3761	3.5	483	0.5
1970	106378	94.9	5034	4.5	704	0.6
Montana						
1960	650538	96.4	21181	3.1	3048	0.5
1970	663043	95.5	26385	3.8	4981	0.7
United States						
1960	158,837,679	88.6	523,591	0.3	19,964,405	11.1
1970	178,119,221	87.6	763,594	0.4	24,327,343	12.0

Sources: U.S. Bureau of the Census, Census of Population: 1960, Characteristics of the Population: U.S. Summary (Washington, D.C.: U.S. Government Printing Office, 1964).

U.S. Bureau of the Census, Census of Population: 1960, Characteristics of the Population: Montana (Washington, D.C.: U.S. Government Printing Office, 1963).

U.S. Bureau of the Census, Census of Population: 1970, Detailed Characteristics: U.S. Summary (Washington, D.C.: U.S. Government Printing Office, 1973).

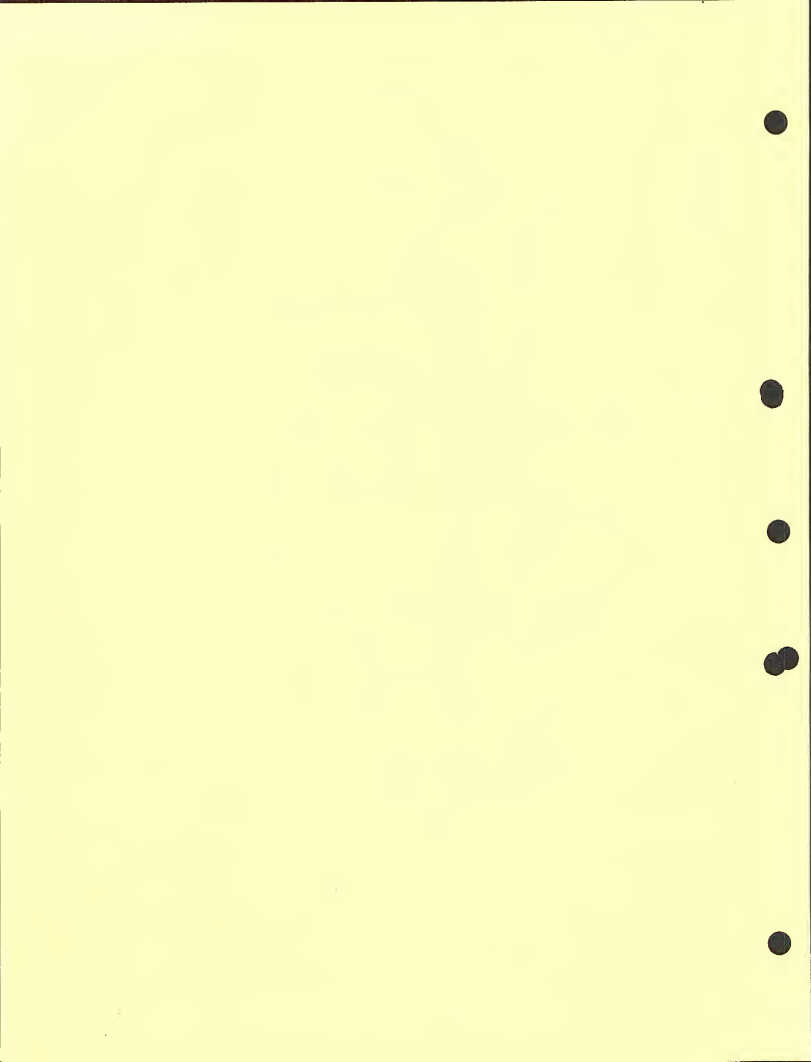


TABLE I-3

SEX DISTRIBUTION BY COUNTY AND REGIONAL TOTAL
1960 and 1970

County	Male		Female	
	Number	%	Number	%
Big Horn				
1960	5,032	50.3	4,975	49.7
1970	4,990	49.6	5,067	50.4
Carbon				
1960	4,203	50.5	4,114	49.5
1970	3,559	50.3	3,521	49.7
Stillwater				
1960	2,863	51.8	2,663	48.2
1970	2,338	50.5	2,294	49.5
Sweet Grass				
1960	1,689	51.3	1,601	48.7
1970	1,556	52.2	1,424	47.8
Yellowstone				
1960	38,843	49.2	40,173	50.8
1970	42,459	48.6	44,907	51.4
MYAPO Region Total				
1960	52,630	49.6	53,526	50.4
1970	54,902	49.0	57,213	51.0
Montana				
1960	343,743	50.9	331,024	49.1
1970	347,005	50.0	347,404	50.0
United States				
1960	88,331,494	49.3	90,991,681	50.7
1970	98,912,192	48.7	104,299,734	51.3

Sources: U.S. Bureau of the Census, Census of Population: 1960, Characteristics of the Population: U.S. Summary (Washington, D.C.: U.S. Government Printing Office, 1964).

U.S. Bureau of the Census, Census of Population: 1960, Characteristics of the Population: Montana (Washington, D.C.: U.S. Government Printing Office, 1963).

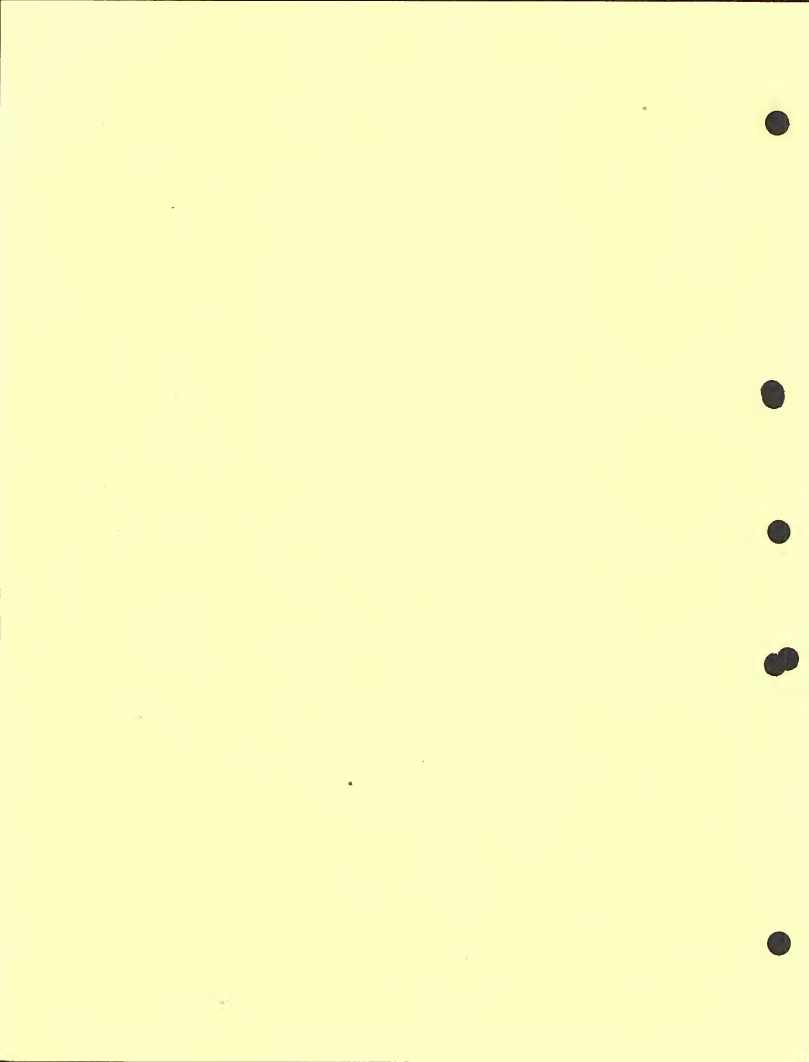


TABLE I-4

LABOR FORCE, EMPLOYMENT, AND UNEMPLOYMENT RATE OF THE
MYAPO REGION, MONTANA, AND THE UNITED STATES
1960 and 1970

	Civilian Labor Force		Employment		U/LF	
	1960	1970	1960	1970	1960	1970
Big Horn	3,265	3,317	2,941	3,163	9.9%	4.6%
Carbon	3,053	2,524	2,940	2,393	3.7%	5.2%
Stillwater	2,010	1,617	1,966	1,529	2.2%	5.4%
Sweet Grass	1,268	1,276	1,208	1,249	4.7%	2.1%
Yellowstone	31,518	34,996	29,470	32,966	6.5%	5.8%
MYAPO Region	41,114	43,730	38,525	41,300	6.3%	5.6%
Montana	248,073	270,834	231,270	248,342	6.8%	8.3%
United States	68,144,079	80,051,046	64,639,252	76,553,599	5.1%	4.4%

Sources: U.S. Bureau of the Census, Census of Population: 1960, Characteristics of the Population: Montana (Washington, D.C.: U.S. Government Printing Office, 1963).

U.S. Bureau of the Census, Census of Population: 1970, General Social and Economic Characteristics. Final Report PC(1)-C28 Montana. (Washington, D.C.: U.S. Government Printing Office, 1971).

U.S. Bureau of the Census, Census of Population: 1960, Characteristics of the Population: U.S. Summary (Washington, D.C.: U.S. Government Printing Office, 1964).

U.S. Bureau of the Census, Census of Population: 1970, Detailed Characteristics: U. S. Summary (Washington, D.C.: U. S. Government Printing Office, 1973).



II. THE BASIC INDUSTRIES OF THE MYAPO REGION

A. AGRICULTURE

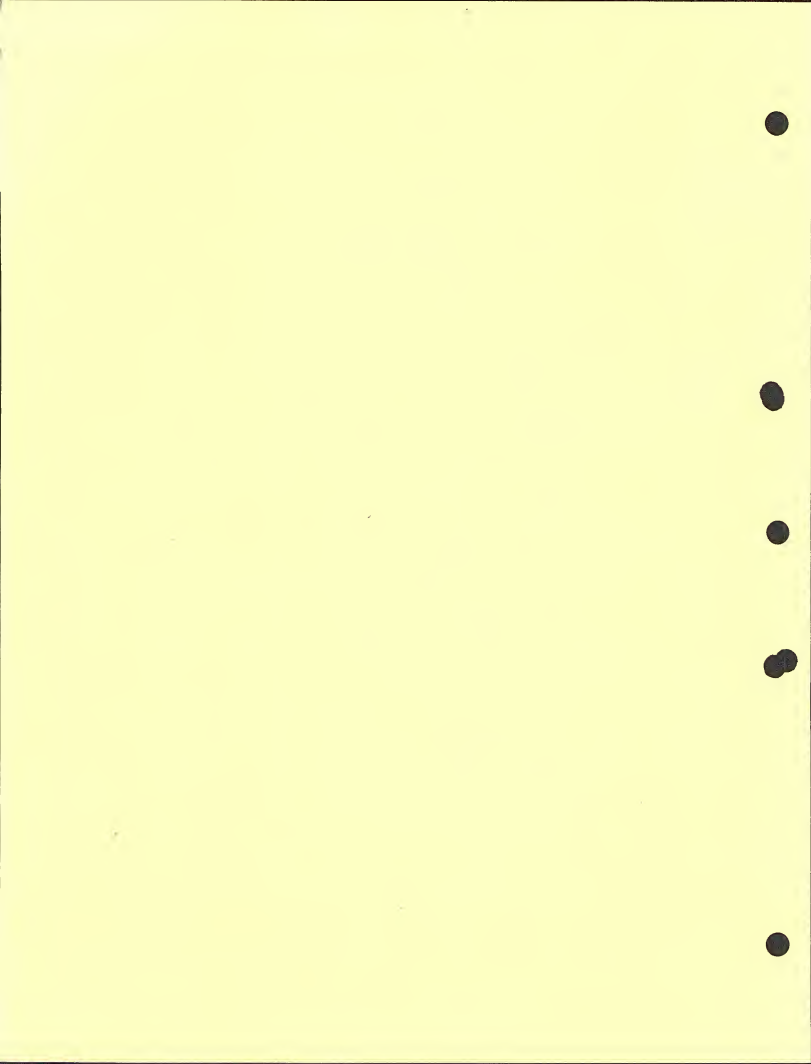
The Yellowstone River valley crosses the MYAPO region in an east-west direction and is a fertile farmland belt. The agricultural history of the valley dates back to the first permanent settlements and has been the single most significant factor in the settlement and tradition of the area. The role of agriculture in the economy has declined somewhat over the last 15 years, but it is still the single most important economic sector in four of the five MYAPO counties.

Table II-1 presents the agricultural employment of the counties for 1973, the last year for which county specific data are available. It is evident that each of the counties except Yellowstone derives a large portion of its employment from agriculture. Yellowstone County has the largest absolute amount of agricultural employment of any single county, but the county's economy is so diverse that agriculture accounts for less than four percent of total employment. The other counties have less total agricultural employment but in each case the proportion of total employment is approximately one-third.

TABLE II-1
AGRICULTURAL EMPLOYMENT
1973

	<u>Agricultural Employment</u>	<u>% of Total Employment</u>
Big Horn	1095	28.2
Carbon	967	31.2
Stillwater	679	36.2
Sweet Grass	467	31.6
Yellowstone	1689	3.9
MYAPO Region	4897	9.2

Source: U.S. Department of Commerce, Bureau of Economic Analysis,
Regional Economic Information Service, Summary Data Tapes.



The agricultural sector has experienced considerable change over the 15-year period since 1960. Its dominance in 1973 is clear, but its importance has declined from earlier years. Table II-2 presents Census employment figures for 1960 and 1970.¹ In each county except Sweet Grass the absolute amount of employment and the proportion of the total decreased significantly.

There were several forces which acted to bring about a decrease in agricultural employment. First, the long-standing trend toward mechanization has decreased the dependence on labor. Mechanization has also resulted in larger farms. The average farm size in Montana was 2104 acres in 1960 and 2432 in 1970 (Montana Department of Agriculture and Statistical Reporting Service, 1974:8). This causes a decrease in the number of farms and, thus, the amount of agricultural employment.

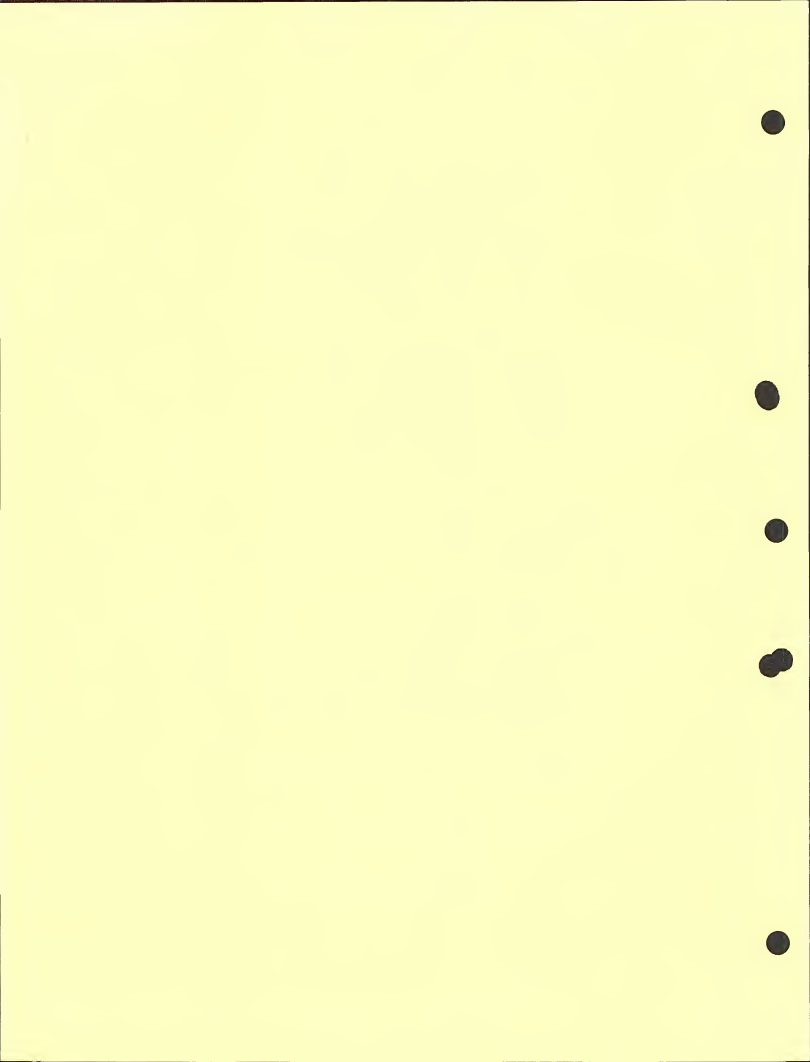
TABLE II-2
AGRICULTURAL EMPLOYMENT
1960 and 1970

	1960		1970	
	<u>Agricultural Employment</u>	<u>% of Total</u>	<u>Agricultural Employment</u>	<u>% of Total</u>
Big Horn	1195	40.6	885	28.0
Carbon	954	32.4	696	29.1
Stillwater	695	35.4	409	26.7
Sweet Grass	492	40.7	491	39.3
Yellowstone	1928	6.5	1410	4.3

Source: U.S. Bureau of the Census, U.S. Census of Population: 1960, Characteristics of the Population: Montana (Washington, D.C.: U.S. Government Printing Office, 1963).

U.S. Bureau of the Census, U.S. Census of Population: 1970, General Population Characteristics: Montana (Washington, D.C.: U.S. Government Printing Office, 1971).

¹These data are compiled from the principal industry affiliation of employed persons whereas the Bureau of Economic Analysis (BEA) data given in Table II-1 are compiled on an establishment basis by number of jobs. Because of differences in definitions and data sources, the data in the two tables are not directly comparable.



The trends toward mechanization and large farms is a national, if not world-wide, trend. There are other pressures on agriculture which are less universal. The largest of these is competition with other land uses. The development of recreation and tourism in the counties has led to greatly increased land values. Farming does not generate enough profit to allow purchasing of land at residential prices. As a result, when a farmer retires or sells his farm, the purchaser is not another farmer but is more likely to be a developer or speculator. It follows, then, that there is less land in agricultural production from year to year. Another cause of reduced employment is the recent instability of the market. Prices and costs have fluctuated rapidly, and farming has been discouraged as a profession (McFarland, personal communication, June 2, 1976).

The net result of changes in the agricultural profession is economic hardship for areas that have historically been largely dependent on it. These trends are likely to continue, and agriculture will provide an increasingly smaller portion of income and employment in the MYAPO region.

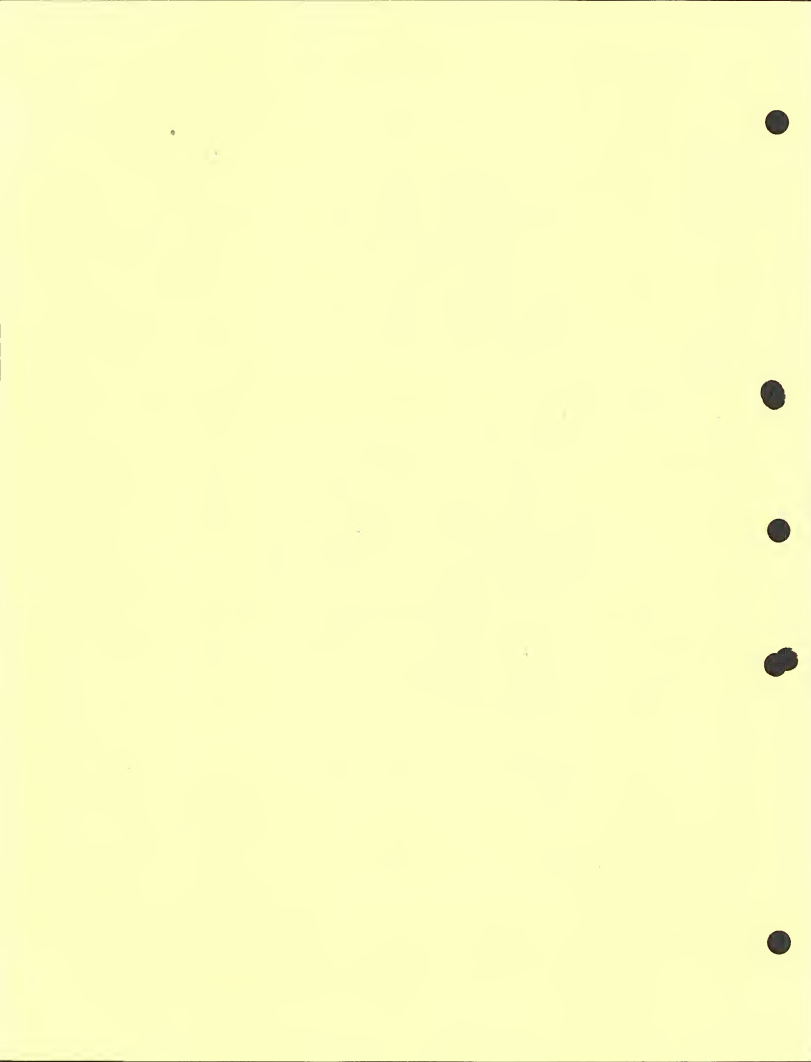
B. MINING

Mining has historically been an important part of the economic base of Montana, and the MYAPO region is no exception. There was an important coal mining industry in Carbon County, chrome was mined in Stillwater County during World War II, and oil and gas exploration and production have occurred regularly throughout the region. In the last few years, interest in coal development has increased manyfold; there is much renewed interest in chrome and platinum mining in the Stillwater Complex, and there are promising indications of significant new oil finds in deep wells on the east face of the mountains in Stillwater, Sweet Grass, and Carbon Counties. Each of the mining subsectors are discussed below.

3. Hard Rock Mining

Hard rock mining has played a small and sporadic role in the economic base of the MYAPO region. The center of activity is a narrow mineralized zone in Sweet Grass and Stillwater Counties known as the Stillwater Complex. The complex is an area approximately 30 miles long and five to ten miles wide, totaling approximately 112,000 acres; almost all of which is on National Forest land (U.S. Forest Service, 1971: 2-3).

The Stillwater Complex has the largest known chromite and platinum metal reserves in the United States and the second largest nickel reserves (Page and Dohrenwend, 1973: 1). Other minerals included in the ore are copper, palladium, and iron. There has been exploration and mining activity since 1870, and there are four major mining claims in the

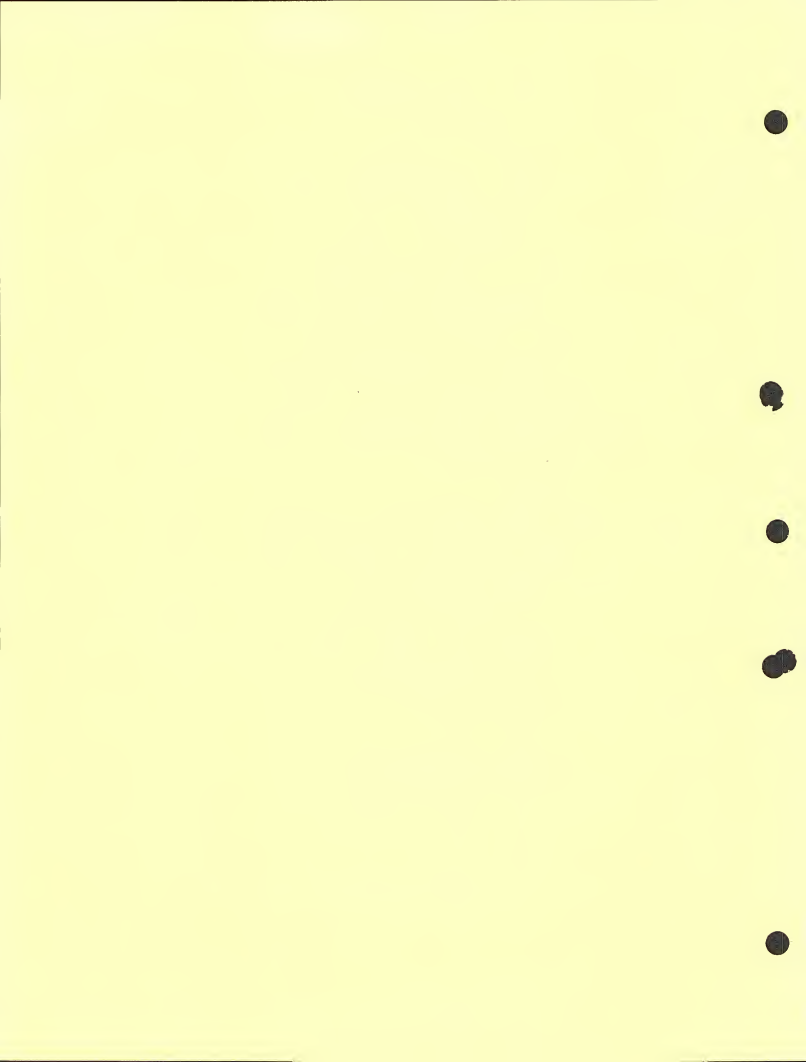


area presently. The most recent production was by the United States government during World War II. This production ended in 1961, but there was a stockpile of ore left near the mine just southwest of Nye. This stockpile is being hauled in trucks to the railroad at Columbus, and depletion of this source is expected within four years (geologist, Custer National Forest, personal communication, July 1, 1976).

The most recent exploration activity began in 1966 with the presence of four companies--Anaconda Company, Johns-Manville, AMAX Exploration, Inc., and Cypress. Johns-Manville activity is focused on platinum and palladium, while Anaconda and AMAX are interested in nickel and copper deposits.

Johns-Manville has advanced furthest in exploration, and results of diamond drilling that began in 1972 were encouraging enough to begin construction of an exploratory adit or tunnel in November, 1974 (Johns-Manville, January 30, 1976: 3). However, in June, 1975, the adit struck a water leak approximately 200 feet from the West Fork Stillwater River which caused serious problems because the adit contained large amounts of ammonium nitrate from blasting powder. A recycling system was set up to contain the water inside the adit, a system which was successful until the amount of water increased. It was discovered, however, in January, 1976, that drainage from the adit was entering the river by an underground route. The water measurably increased the nitrate content of the West Fork Stillwater River downstream from the adit drainage. In early February of this year, continued blasting opened up a larger flow of water. Activity to extend the tunnel was terminated; at first because of the amount of water encountered and later by order of the Montana Department of Health and Environmental Science. In May, Johns-Manville paid a fine to the state for discharging water without a discharge permit. Johns-Manville has applied for a discharge permit, but it will not be issued until there is an environmental assessment and a public hearing. Work has not been resumed at the adit as of this writing (Stewart, personal communication, June 8, 1976).

Present levels of activity employ approximately 50 persons per company for close to six months a year and, thus, do not constitute a large component of the economic base of the region. However, almost all of the nickel, chrome, and platinum used in the United States today is imported. In fact, over 90 percent of the chrome is imported, primarily from Russia and South Africa (U.S. Bureau of Mines, 1970: 261). Possible instability of these sources of supply is cited as a possible stimulus for mining the ore within the Stillwater Complex. If mining were to occur, it would occur on a large scale and become very significant in the economic base of Stillwater and Sweet Grass Counties (LaMoure, personal communication, June 1, 1976).



C. RECREATION-TOURISM

Recreation and tourism are relatively easy to define qualitatively but very difficult to define operationally. The economic sectors which serve recreation and tourism generally serve the resident population as well. The trade and service sectors of the economy serve the needs of the area's residents and, in that sense, are nonbasic industries. However, whenever the customers of the trade and service sectors are non-residents who are traveling through the area or who have the area as a destination other than for permanent residence, the demand is from outside the area and thus these sectors are basic.

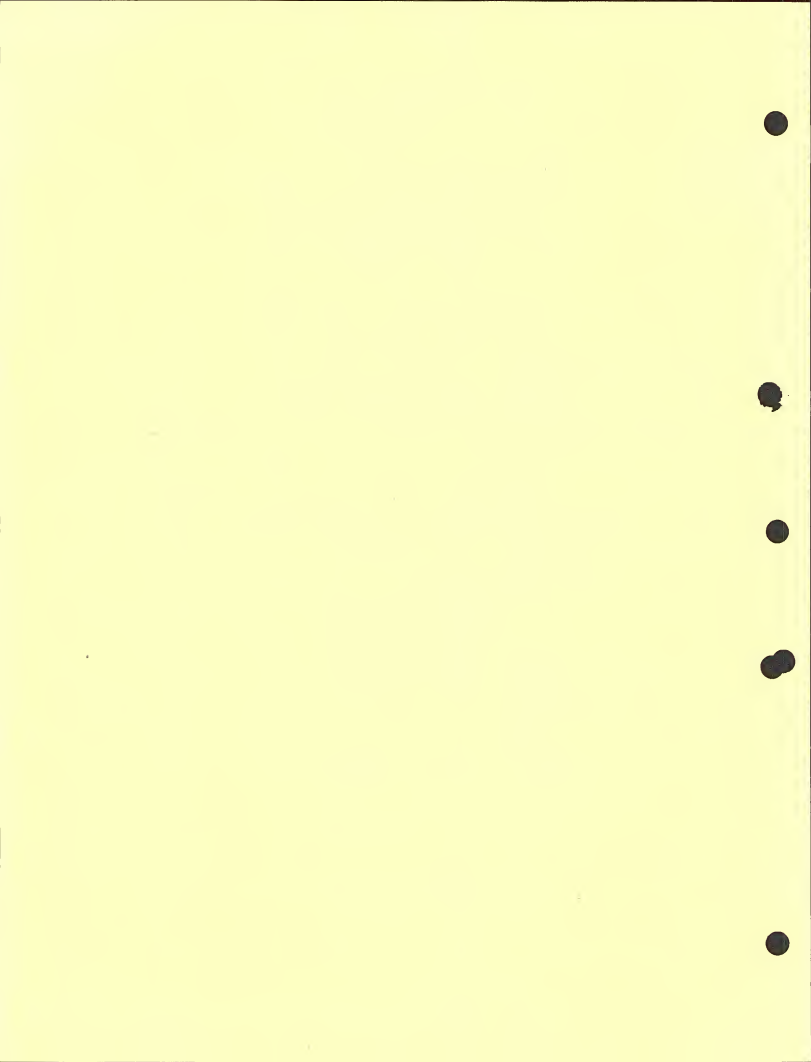
It is impossible to determine exactly the extent to which the trade and service sectors respond to each demand. A fairly accurate approach, whenever personal interview of each individual proprietor is not possible, is to compare an area's employment in the trade and service sectors to such employment in other areas of the same population. If employment is comparatively high, most of the excess may be attributed to recreation and tourism demand. This procedure was applied to the MYAPO region with results as shown in Table II-3.

TABLE II-3
RECREATION AND TOURISM EMPLOYMENT
MYAPO REGION
1973

	Total Trade Employment ^a	Basic Trade Employment ^b	Total Services Employment ^a	Basic Services Employment ^b
Big Horn	522	133	448	---
Carbon	366	197	272	72
Stillwater	214	18	128	3
Sweet Grass	273	140	152	35
Yellowstone	11,444	---	7,566	---
MYAPO Region	12,819	488	8,566	110

^aU.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, Summary Data Tapes.

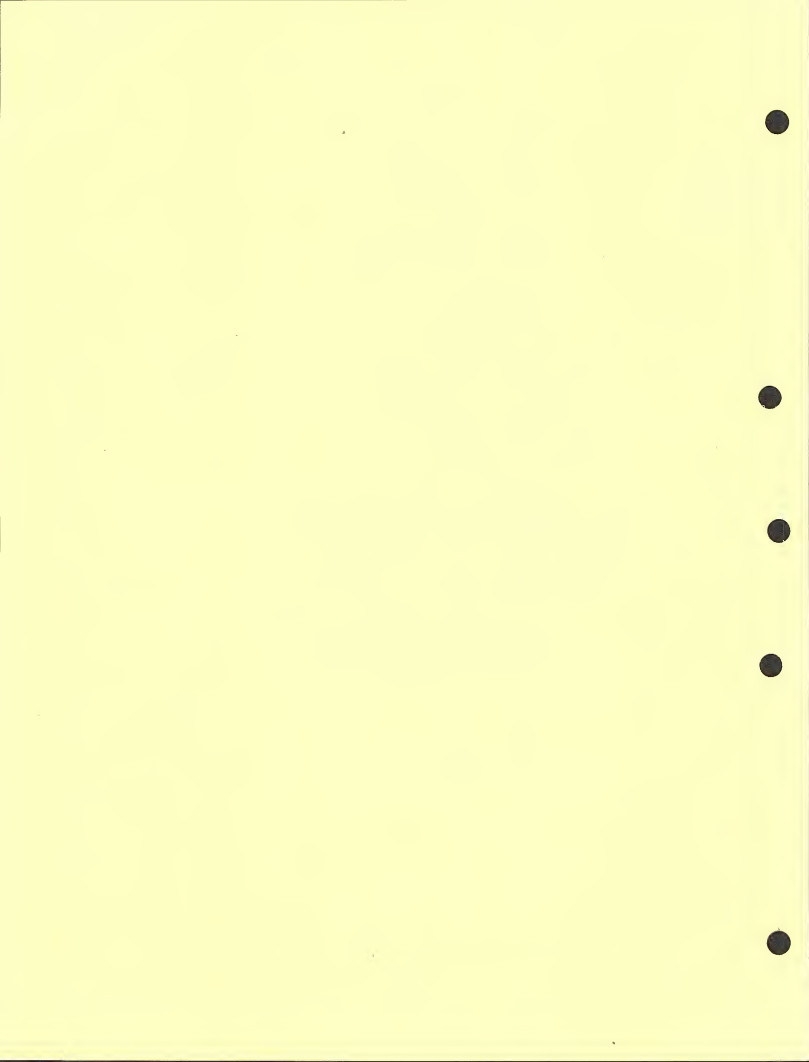
^bMountain West Research, Inc.



Stillwater County, like Carbon County, has experienced similar trends in recreation and tourism. There is considerable through-traffic on I-90 which passes near Park City and the county seat of Columbus. Recreation attractions include camping, picnicking, and hiking in Custer National Forest as well as hunting and fishing both there and on adjacent lands. There is also considerable second-home construction, mainly on the Stillwater River. Columbus benefits most from these activities although there are some gas and convenience item sales in Absarokee.

Senate Bill 1018, which was introduced in the U.S. Senate in March 1975, would also encourage recreation and tourism in the western counties. This bill would designate 542,437 acres of the Custer and Gallatin National Forests as the "Beartooth Wilderness". A considerable portion of the wilderness would be within Carbon, Stillwater, and Sweet Grass Counties and access to it would be available from each county. Rangers and planners for the National Forests state that the publicity associated with the wilderness proposal increased visits somewhat, and they believe that official designation would draw even more people to the area (Miller, Inam, and Wetzsteon, personal communication, 1976).

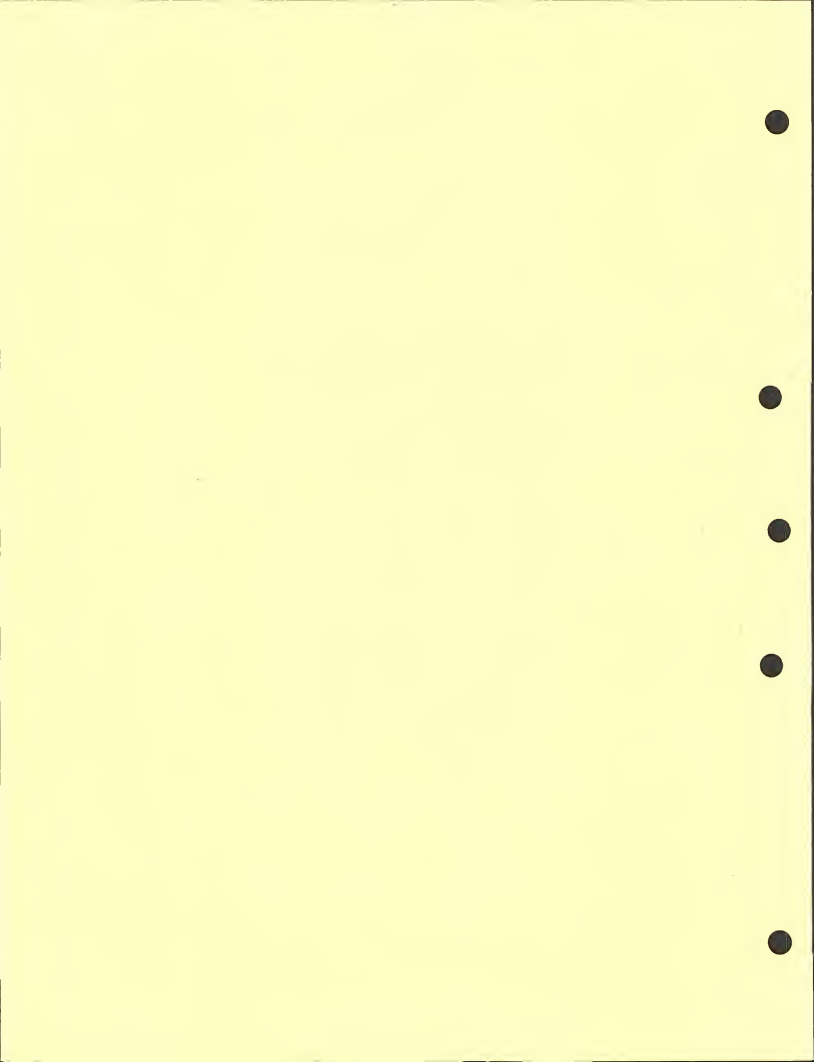
All facilities for which visitor-use data are available have experienced significant increases in use in recent years. From 1967 to 1972, total visits to Custer Battlefield National Monument and Bighorn Canyon National Recreation Area, both in Big Horn County, increased by 22.1 percent and 48.6 percent, respectively. Gallatin and Custer National Forests in the western counties have experienced use increases of five to ten percent per year, approximately doubling in use since 1965 (Miller, personal communication, June 4, 1976; and Inman, personal communication, May 27, 1976). The Grizzly Peak Ski Area experienced a ten percent growth in use from the 1974-75 season to the 1975-76 season (Gribble, personal communication, June 7, 1976).



III. THREE ALTERNATIVE FUTURES FOR THE MYAPO REGION

The preceding section has described alternative employment scenarios for the basic industries in each of the five counties. The purpose here is to combine them so that their aggregate implications can be examined for the communities in the region. Alternative Future 1 (AF1) and Alternative Future 3 (AF3) are easy to describe because they simply represent the combination of the lowest scenarios and highest scenarios for each industry. For an industry like agriculture that only has a single scenario, the same numbers are entered for each AF, but for many of the basic industries, there is a substantial difference between the low and the high scenarios. The largest variations occur in oil refining, coal mining, and hard rock mining.

Alternative Future 2 (AF2), on the other hand, is more difficult to characterize. In the case where there is only a single scenario for an industry, there is obviously no interpretation problem. Where there are three industry scenarios, AF2 uses Scenario 2. Where there are two industry scenarios, AF2 uses the scenario felt to be more probable. There are three sectors for which there are only two scenarios--meat packing, oil and gas, and federal government. For meat packing the low scenario is felt to be more probable than Scenario 2. People have always talked of new packing operations in Billings; but, given the basic economic forces acting on the industry and given the vulnerability of the existing two firms to adverse market developments, Billings will be doing well to meet the assumptions of Scenario 1. For oil and gas, Scenario 2 is still fairly conservative and, as explained in the previous section, is thought to be more probable than Scenario 1. Finally, federal government employment under Scenario 2 is thought to be more likely than under Scenario 1. Much of the federal government's activity in the MYAPO region is oriented toward natural resources management that will be affected by western energy development or toward Indian Trust responsibilities which are becoming more complex and more demanding. For these reasons, the 2½ percent annual increase hypothesized in Scenario 2 for the key resource management and Indian-related agencies does not seem at all excessive.



A. STILLWATER COUNTY PROJECTIONS

Stillwater County projections reflect changes in two sectors, agriculture and hard-rock mining. Continually decreasing employment in agriculture results in gradual population declines under AF1 but the presence of mining activity under AF2 and AF3 results in sudden changes in population and employment (See Figure III-1 and Table III-2). Stillwater County population projections include a small portion of Yellowstone County workers for the same reasons as in the case of Carbon County (see previous section).

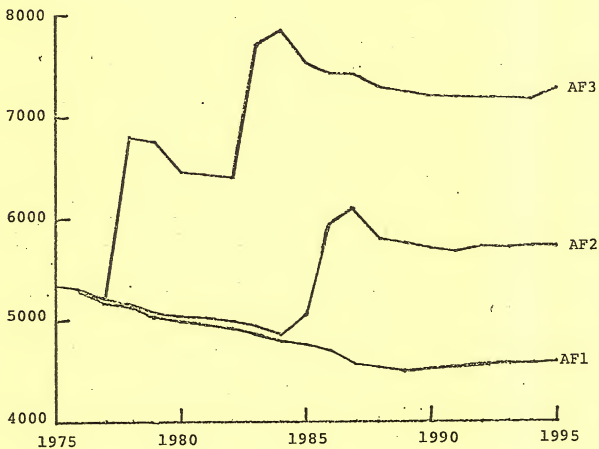
AF1 is based on increasing basic employment in the trade and service sectors and decreasing employment in agriculture. In addition, AF1 assumes that present exploration at the Johns-Manville and Anaconda claims ends in 1985. The result is that population declines steadily until 1990 when it begins gradual growth. Total employment (see Table III-3) remains almost constant throughout the study period with a final total increase of 96 jobs. On the other hand, personal income (Table III-4), both total and per capita, doubles over the projection period. Economic growth, then, is steady, but population declines and employment rises only slightly under AF1.

AF2 experiences the same conditions as AF1 until 1986 when hard-rock mining begins. Mining employment increases 355 in that year bringing about a net in-migration of 949 persons, or nearly 18 percent of the 1986 population. Total personal income increases by 18 percent that year, but per capita income remains constant. In 1987 an additional net in-migration of 147 persons is projected. In the following year, however, construction employment associated with the mining activity declines from 100 to zero, bringing about net out-migration of 286 and total employment decline of 110. From that year to the end of the projection period, population and employment remain nearly constant but personal income per capita increases.

AF3 is similar in pattern to AF2 and shows vulnerability to changes in mining-related employment, but the magnitude of change is much greater. Mining activity at Johns-Manville begins in 1978, triggering net in-migration of 1465 persons. When construction activity ends in 1980, out-migration of 289 is projected. Population and employment remain nearly constant until 1983 when Anaconda begins mining activity. Net in-migration is 1324 in that year, and 153 in the following year. From 1985 through 1994, Stillwater County experiences either zero net migration or net out-migration.

6 *

FIGURE III-1
POPULATION PROJECTIONS FOR STILLWATER COUNTY



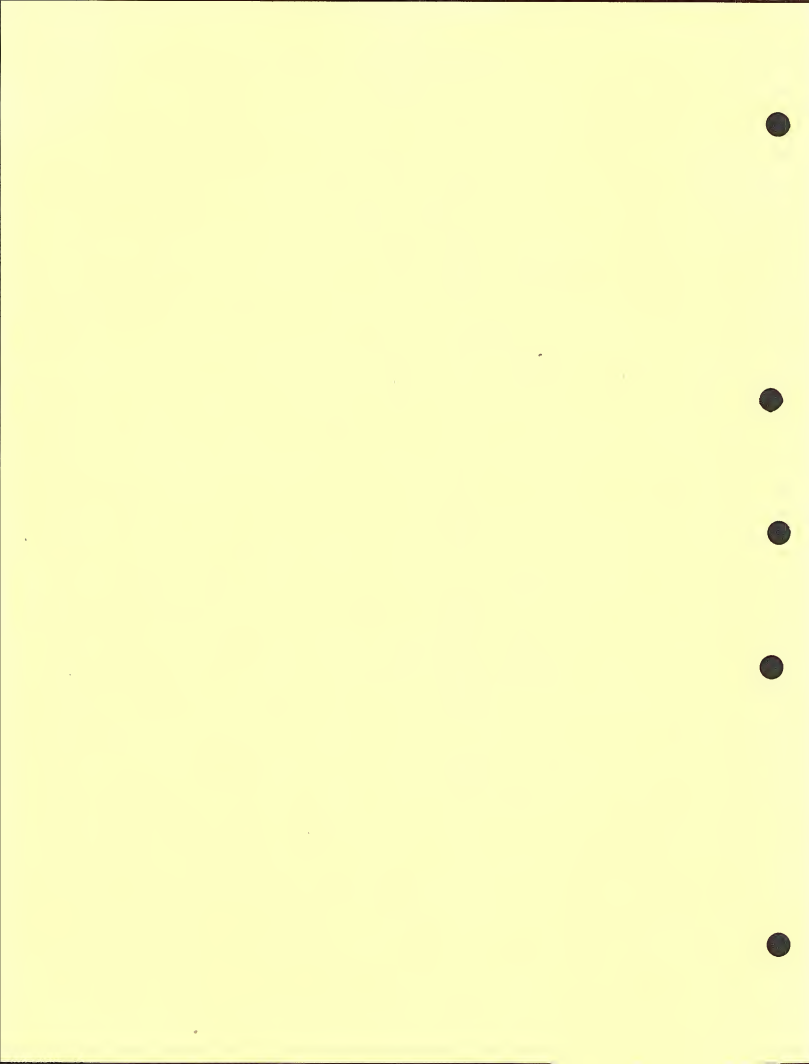


TABLE III-2

STILLWATER COUNTY POPULATION PROJECTIONS

<u>Year</u>	<u>Alternative Future 1</u>	<u>Alternative Future 2</u>	<u>Alternative Future 3</u>
1975	5349	5362	5362
1976	5250	5265	5265
1977	5166	5244	5312
1978	5142	5162	6761
1979	5009	5069	6752
1980	4978	5042	6454
1981	4949	5015	6437
1982	4921	4989	6424
1983	4828	4901	7732
1984	4798	4968	7878
1985	4763	5067	7556
1986	4628	5985	7446
1987	4586	6105	7435
1988	4546	5796	7291
1989	4499	5761	7271
1990	4542	5730	7255
1991	4573	5694	7236
1992	4587	5762	7216
1993	4592	5724	7196
1994	4598	5768	7177
1995	4618	5731	7276

Source: Mountain West Research, Inc.

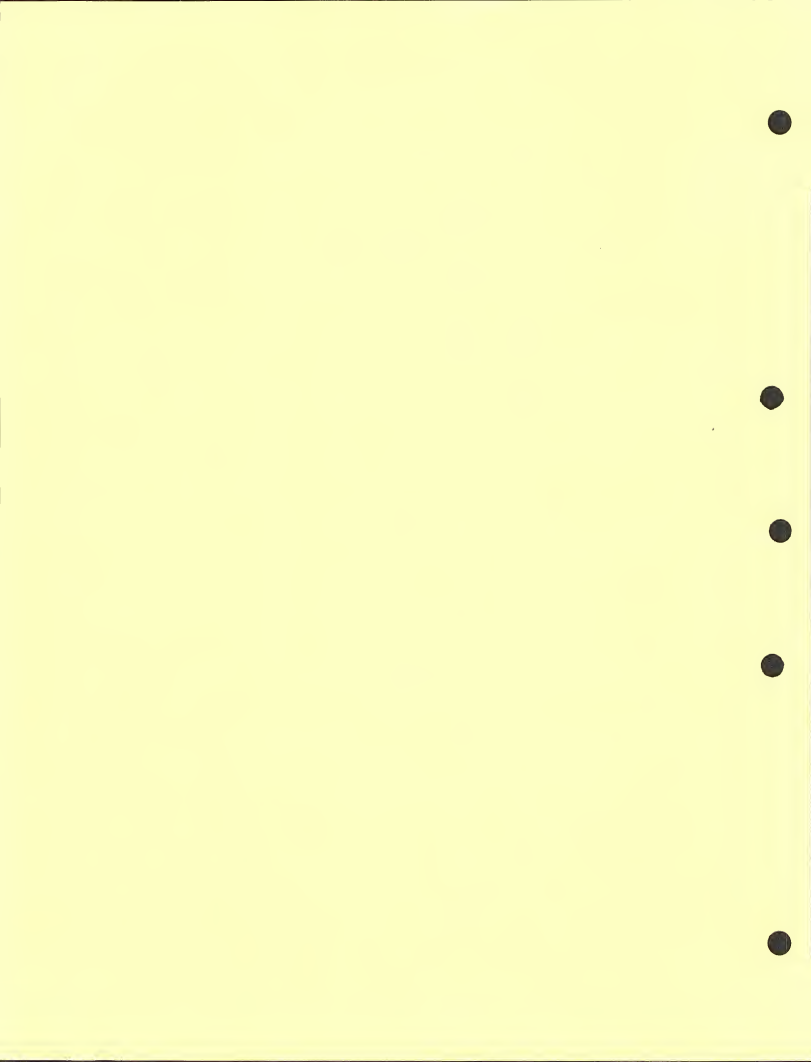


TABLE III-3

EMPLOYMENT PROJECTIONS FOR STILLWATER COUNTY

<u>Year</u>	<u>Alternative Future 1</u>	<u>Alternative Future 2</u>	<u>Alternative Future 3</u>
1975	1976	1982	1982
1980	1994	2021	2693
1985	2027	2153	3404
1990	1998	2606	3449
1995	2072	2686	3538

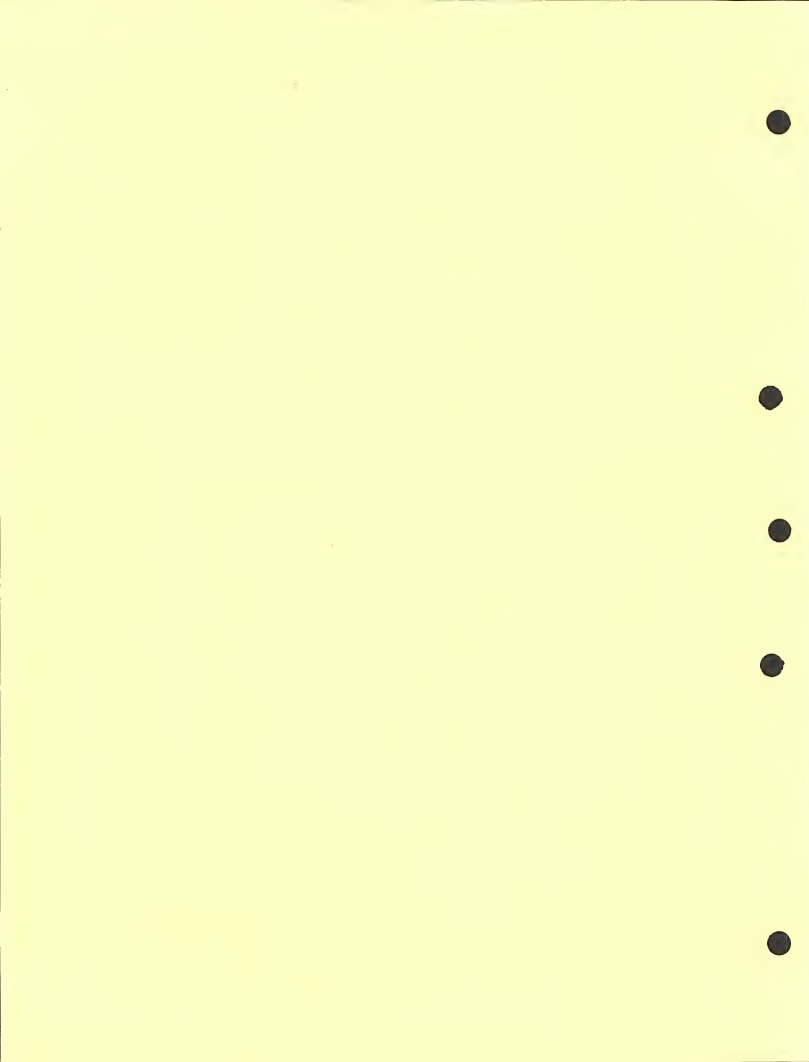
Source: Mountain West Research, Inc.

TABLE III-4

PERSONAL INCOME PROJECTIONS FOR STILLWATER COUNTY

<u>Year</u>	<u>Alternative Future 1</u>		<u>Alternative Future 2</u>		<u>Alternative Future 3</u>	
	<u>Total</u>	<u>PerCapita</u>	<u>Total</u>	<u>PerCapita</u>	<u>Total</u>	<u>PerCapita</u>
1975	\$23,805,611	\$4450	\$23,845,674	\$4447	\$23,845,674	\$4447
1980	28,146,528	5644	28,370,786	5624	33,909,853	5255
1985	33,306,592	5985	34,737,071	6858	46,649,943	6184
1990	38,570,287	8511	45,405,811	7945	54,873,835	7591
1995	45,924,102	10003	53,794,666	9439	64,705,175	8948

Source: Mountain West Research, Inc.



In summary, Stillwater County is extremely vulnerable to changes in the level of mining activity. In AF3, net immigration in 1978 is nearly one-third the 1977 population. Clearly, population will respond to changes in the level of mining employment and by a much greater magnitude. It should be noted, however, that extremely large population and employment rises in AF2 and AF3 do not necessarily imply higher standards of living. In fact the rise in per capita personal income is smallest in AF3 and largest in AF1. Thus, although population and employment experience large, sudden rises in Stillwater County as a result of projected mining activity, the economic conditions for the average resident are projected to be somewhat lower in that case.

1. Community Population Projections

Stillwater County communities vary greatly in projection levels. Reedpoint experiences a small, steady decline from natural population changes. Park City is similar except that it receives some of the Yellowstone County migrants. However, even under AF3, Yellowstone County influences only slightly outweigh natural population declines. The largest Yellowstone County influence in any five-year period is from 1990 to 1995 under AF3 which is a total of 19 persons.

Columbus receives some in-migrants as a result of increased mining and recreation-tourism activity. However, the total population increase is less than 25 percent under any AF.

Absarokee receives the largest portion of mining-related population increases. By 1990 under AF2, and by 1980 under AF3, Absarokee is larger than Columbus and has more than doubled in size. In contrast, under AF1, Absarokee steadily decreases in population. The significance of Stillwater Complex mining can be seen in the fact that under moderate production and employment levels, the mining stimulates 907 in-migrants at Absarokee between 1985 and 1990. Under high production levels, the in-migrants number 1268 between 1975 and 1980. As drastic as these changes may seem, five-year projections mask larger changes in interim years. For example, under AF2 there are 752 in-migrants in 1986, 131 the following year, and an out-migration of 255 in 1988. Similarly, Absarokee under AF3 receives 1465 in-migrants in 1978, zero in 1979, and 289 persons leave in 1980. The point is that changes in any five-year period may be distributed very unevenly in communities which receive the population growth associated with large projects such as mining.

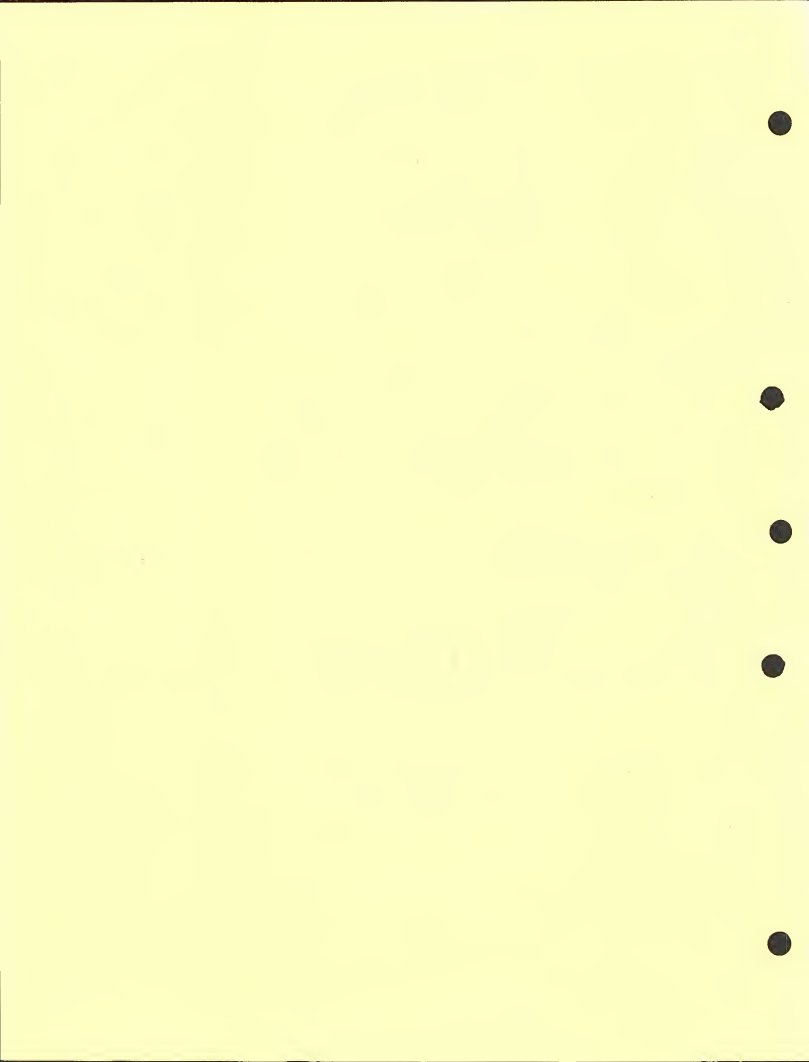


TABLE III-5COMMUNITY POPULATIONS, 1970 AND 1975
MYAPO REGION

	1970 Population	1975 Population Estimate
BIG HORN COUNTY		
Busby	300	300
Crow Agency	1000	1400
Fort Smith	150	150
Hardin	2733	3000
Lodge Grass	806	875
Pryor	50	50
St. Xavier	100	100
Wyola	125	95
CARBON COUNTY		
Bearcreek	31	60
Bridger	717	825
Fromberg	364	425
Joliet	412	550
Red Lodge	1844	2000
Roberts	200	250
STILLWATER COUNTY		
Absarokee	600	700
Anaconda Mine Site	0	25
Columbus	1173	1350
Fishtail	15	15
Johns-Manville Mine Site	0	25
Nye	10	10
Park City	430	600
Reedpoint	133	175
SWEET GRASS COUNTY		
AMAX Mine Site		25
Big Timber	1592	1750

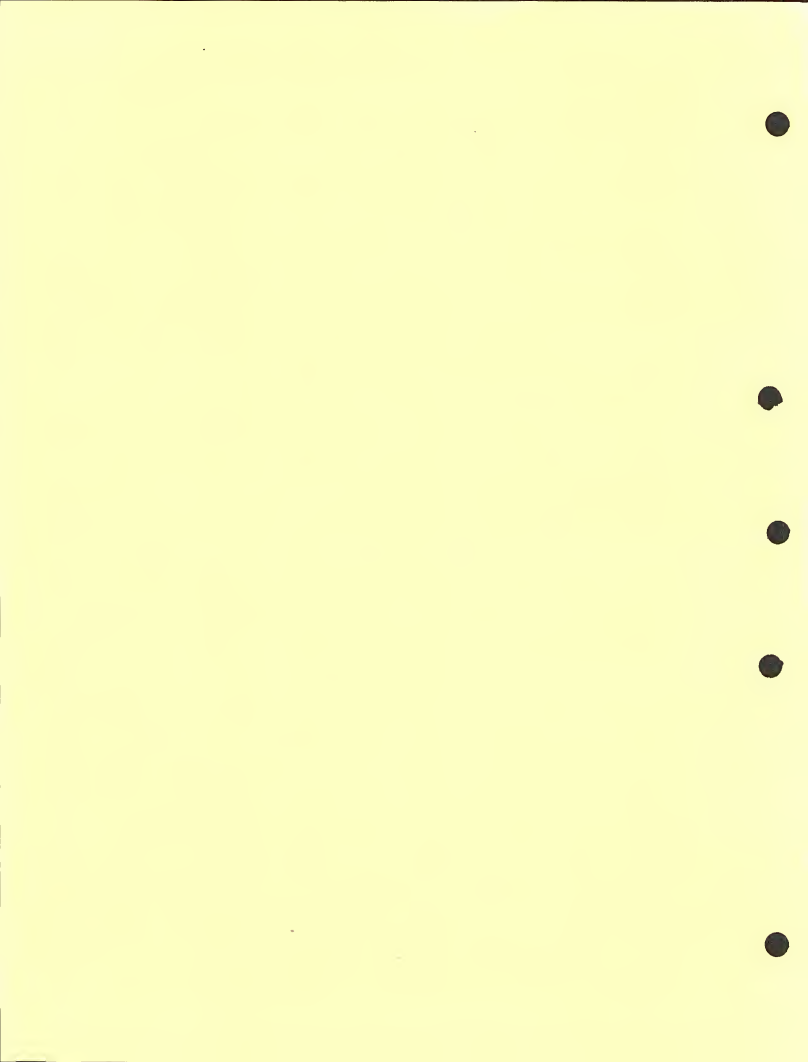


TABLE III-6
COMMUNITY POPULATION PROJECTIONS
STILLWATER COUNTY

	Absarokee	Anaconda Mine Site	Columbus	Fishtail	Johns-Manville Mine Site	Nye	Park City	Reedpoint	Rural Residual
Estimated 1975 ^a	700	25	1350	15	25	10	600	175	2452
<u>AF1</u>									
1980	654	25	1259	15	25	10	550	171	2269
1985	638	25	1271	15	25	10	537	166	2076
1990	609	0	1362	15	0	10	525	160	1861
1995	612	0	1676	15	0	10	513	152	1638
<u>AF2</u>									
1980	665	25	1261	15	25	10	567	172	2282
1985	821	50	1305	15	50	10	556	168	2052
1990	1705	0	1348	35	0	20	551	163	1908
1995	1676	0	1562	35	0	20	550	157	1731
<u>AF3</u>									
1980	1958	25	1382	15	0	10	592	173	2299
1985	3038	50	1455	65	0	22	598	171	2157
1990	2960	0	1415	64	0	21	605	169	2021
1995	2935	0	1588	64	0	21	615	167	1886

^aAs estimated in Table III-77. Rural residual equals AF2 value for county for 1975 minus community estimates.

Source: Mountain West Research, Inc.

